

THE BOTANIST JOACHIM STEETZ (1804-1862)

by

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ABSTRACT

Short, P. S. & Sinkora, D. M. The botanist Joachim Steetz (1804-1862). *Muelleria* 6(6): 449-494 (1988). - The private herbarium of the Hamburg botanist Joachim Steetz is housed in the National Herbarium of Victoria (MEL). It was purchased in 1863. Details of the contents of Steetz's Herbarium are provided along with biographical notes and a list of his publications. Over 160 collectors, all listed, contributed specimens from more than 30 countries to Steetz's herbarium. Detailed notes are provided on the collections of N. J. Andersson, N. Binder, J. D. Hooker and T. Thomson, J. W. K. Moritz, W. C. H. Peters, J. L. Preiss, M. R. Schomburgk, B. Seemann, F. W. Sieber, G. T. Siemssen, A. Sinclair and N. S. Turczaninow.

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INTRODUCTION

With the appointment in 1853 of Ferdinand Mueller to the position of Government Botanist for Victoria the international importance of what is now the National Herbarium of Victoria (MEL) to systematic botany was assured. He actively encouraged botanical exploration in Australia and before his death in 1896 had written over one thousand scientific articles on the Australian flora (Churchill *et al.* 1978, 1984). Mueller also acquired specimens from overseas, either by exchange, donation or departmental purchase. For example he received donations from both Sir William Hooker and Sir Joseph Hooker of Kew, donations which included specimens of the latter's Indian plants. He also had in his keeping the private herbarium of Joachim Steetz and almost the whole of O. W. Sonder's herbarium.

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In a memorandum pertaining to the purchase of Sonder's herbarium he noted that it alone was so large that the Melbourne herbarium, "which is so rich in Australian plants, would become equally important in its extra Australian collections" (Mueller 1863a). He subsequently reported that "no region of the globe is unrepresented in the Melbourne Herbarium, and this often by original material not extant in many other places nor now obtainable anywhere" (Mueller 1888, p. 211).

Much information has been compiled by both past and present botanists and technical staff about the holdings of MEL. The contributions by A. B. Court and J. H. Willis are particularly noteworthy. However, the majority of this information, including a general listing of contributions from last century, is as yet unpublished. With the exception of scattered notes to be found in taxonomic revisions the only publications dealing with MEL general holdings of non-Australian plants are notes by Court (1972) on the Sonder herbarium and by Anderson (1971) on Otto Carl Berg's types of Myrtaceae. The library also contains an unpublished report by C. A. Corn (1983) on the MEL holdings of W. Hillebrand's collections from Hawaii. The MEL holdings of Australian plants are comparatively well known, at least by Australian botanists, although much is still to be published and, as with the non-Australian material, just how and when some collections were acquired is still to be resolved.

In this paper we provide details of the herbarium of the Hamburg botanist Joachim Steetz. Steetz published on a number of plant groups, particularly the Compositae, and type collections of many taxa named by him are to be found in MEL. In drawing attention to his herbarium we not only highlight the presence of the type collections but also the fact that the Steetz herbarium is a mine of information for anyone interested in the history of the acquisition of specimens by botanists. Through the auspices of over 160 collectors Steetz was able to acquire specimens from more than 30 countries. Too often we find that herbaria acquired in such a manner are poorly labelled and information as to how a person acquired them can be obtained only indirectly by checking correspondence and publications. To some extent this is true for the Steetz herbarium but in many cases specimens acquired by Steetz are accompanied by meticulous notes. He frequently recorded not just the collector, locality and date of collection but also from whom and when he acquired a specimen. Very often collections were not acquired directly from the collector but through a second or third party. Hence, in the Steetz herbarium, we have a most interesting and useful documentation of the chains of distribution of herbarium specimens by collectors of the early to mid-nineteenth century.

The Steetz herbarium is incorporated in the general holdings of MEL and we lack a computerized record of our holdings. To ascertain the content of the herbarium it was necessary to obtain general information about Steetz from published material and unpublished correspondence housed in other herbaria and libraries. In doing this we naturally came upon considerable biographical information and it is included in this paper.

We realize that we have not examined all data pertaining to Steetz, including publications and unpublished correspondence, and would appreciate receiving additional information from others.

ABBREVIATIONS

Herbaria and associated libraries are referred to in the text by the abbreviations used by Holmgren, Keuken & Schofield (1981).

A: Herbarium, Arnold Arboretum of Harvard University, Cambridge, Massachusetts, U.S.A.

B: Botanischer Garten und Botanisches Museum Berlin-Dahlem, Berlin, Federal Republic of Germany.

BM: Herbarium, British Museum (Natural History), London, England.

BR: Herbarium, Jardin Botanique National de Belgique - Nationale Plantentuin van België, Meise, Belgium.

CGE: Herbarium, University of Cambridge, England.

DNA: Herbarium of the Northern Territory, Darwin, Australia.

EA: East African Herbarium, Nairobi, Kenya.

- G: Herbarium, Conservatoire et Jardin botaniques de la Ville de Genève, Switzerland.
 GH: Gray Herbarium of Harvard University, Cambridge, Massachusetts, U.S.A.
 HAL: Martin-Luther-Universität, Halle, German Democratic Republic.
 HBG: Herbarium, Institut für Allgemeine Botanik und Botanischer Garten, Hamburg, Federal Republic of Germany.
 K: The Herbarium, Royal Botanic Gardens, Kew, England.
 LD: Botanical Museum, Lund, Sweden.
 LE: Herbarium of the Department of Higher Plants, V. L. Komarov Botanical Institute, Leningrad, U.S.S.R.
 MEL: National Herbarium of Victoria, South Yarra, Australia.
 NSW: National Herbarium of New South Wales, Sydney, Australia.
 P: Muséum National d'Histoire Naturelle, Paris, France.
 PERTH: Western Australian Herbarium, Perth, Australia.
 S: Herbarium, Swedish Museum of Natural History, Stockholm, Sweden.
 TCD: Herbarium, Trinity College, Dublin, Ireland.

BIOGRAPHICAL INFORMATION

GENERAL

STEETZ, Joachim. Born 12 November 1804. Died 24 March 1862.

Following Steetz's death in 1862 an unsigned obituary was published in *Bonplandia*. We suspect it came from the pen of Dr. Berthold Seemann (Anonymous 1862), editor of the journal and a long time friend of Steetz. The following is a translation of the obituary from the original German:

"Dr Joachim Steetz, one of the oldest contributors to *Bonplandia*, died on the 24th March after 9 a.m., only 57 years of age. He was a very knowledgeable and versatile man in the fields of the natural sciences as medical doctor, botanist and zoologist. He was born on the 12th November 1804, son of the local merchant Zimbert Joachim Steetz, from 1819 attended school at the Johanneum and from 1824 the Gymnasium academicum in his hometown, then from April 1825 he studied in Halle and from Autumn 1826 Medicine in Würzburg, where he graduated as Doctor of Medicine, Surgery and Obstetrics. He then settled in Hamburg as General Practitioner. As such he worked for more than 30 years, at the same time also as doctor to the destitute and as doctor at the Holy Spirit Hospital. He enjoyed the fullest confidence of the authorities and scholars and the esteem of his fellow citizens. His scientific lectures and his not inconsiderable collection of insects gave an honourable witness to his ability in zoology, for which he equipped himself by 14 years of specialized study. In the field of Botany he was esteemed as a precise systematist. With his many publications he assured himself of an honoured name; his rich herbarium is proof of his activity. He worked mainly on Compositae and in these largely on Asteroideae [Astereae], which held a special attraction for him. He first published on this family in *Pl. Preiss.* vol. 1, where he described several new genera and species, then worked on the plants collected by Dr. B. Seemann, which were published in the latter's work *Bot. voy. Herald*, further also those collected by Prof. Peters in Mozambique, which however he was not able to complete before his death. As well Steetz did the Büttneraceae [Sterculiaceae] in vol. 2 of *Pl. Preiss.* and wrote up the Tremandraceae in a separate publication, as well as numerous other genera and species. Besides these he wrote essays for various botanical and natural history journals. Steetz was a co-founder of the Hamburg Natural History Society and took an active part in their meetings with a number of written contributions and free lectures. For many years he was the Society's correspondence secretary and later its Vice-President. He was a founding member of the Hamburg Horticultural and Floricultural Society, for the past 25 years a member of its administration and for the past eight years Secretary and Editor of its Annual Reports. When the Museum committee was first called together in 1843 he was elected as representative member by the Grammar School Deputation and continued to be re-elected as each term of office expired. For the past 15 years he held the office of minute secretary in this Commission. During legal proceedings

against Professor Lehmann in 1849 the same authority entrusted him with the teaching of Botany at the Academy and the Grammar School as well as the interim Directorship of the Botanic Garden. The following year, after the law suit against Lehmann had been decided in favour of the accused, Steetz received an honourable discharge with grateful acknowledgement of his services to the State. In 1850 he was invited by some of the Professors of the Academic College to assist at the newly founded Teacher's College by taking on the lectures in scientific botany, which he continued to the present without a break. He received backdated confirmation in this position from the authorities in 1858. In his position as lecturer he contributed enormously to improvements in the quality of scientific teaching generally and in botany in particular. In 1855 he was invited to Glasgow by the Committee of the British Association for the Advancement of Science under the Presidency of the Duke of Argyll to their meeting, an honour extended to only 200 foreigners who were scholars in all the various fields of the natural sciences. His visit there proved to have the most favourable consequences for his scientific studies. An equal honour for him was his election as Member to the Imperial L.-C. Academy of Natural Scientists [*Leopoldina*] in 1857 under the name J. E. Smith, as well as membership of a number of other scientific societies in Moscow, Breslau, Mauritius etc. When after the death of Lehmann no botanical or zoological lectures could be scheduled for the timetable of the summer semester he was asked by the Director, following a petition by a number of students, to announce botanical lectures twice a week. Steetz, honoured by this request, accepted most willingly and has continued to fill the gap since then, as the Chair of Botany combined with the Directorship of the Botanic Gardens could not be filled. He also applied as candidate for the Professorial Chair and with his manifold talents and abilities and the practical use he made of them in all the various scientific institutes mentioned above he was well qualified. While his prospects looked favourable he suffered a serious illness, which unfortunately resulted in his early death.

In spite of his demanding and time-consuming profession Dr. Steetz had dedicated his time to the service of science and to a large extent to the intellectual interests of his hometown. But he found full satisfaction in the knowledge of the respect in which he was held by everyone and in the uninterrupted study of his sciences, and that quiet calm, freshness of mind and sunny disposition, which are amongst the first prerogatives for successful studies. He recognized that such continued and consistent striving through a long number of years after the one goal was absolutely necessary to achieve some sort of mastery even in only some part of the natural sciences and to translate the results into practical achievements in life. Here and abroad his benevolent work in Hamburg will remain always in the memory of his many friends.''

Schlechtendal's (1862) obituary to Steetz provides little additional information. Neither does an anonymous (1879) entry in an Encyclopaedia of Hamburg authors. However we do learn that Steetz married Johanne Henriette Möller on 23 July 1842. Their first child, a girl, died when not quite three years old. They had two further children, a son and daughter, and both were still living at the time of Steetz's death. It is revealed in Schlechtendal's account that a post mortem showed Steetz to have died of tuberculosis of the lungs and lower abdomen.

A friend of Steetz, G. Theodor Siemssen, acted as trustee for Steetz's widow (see notes on acquisition of herbarium).

Published letters (Steetz 1854b), botanical works and unpublished correspondence reveal that Steetz was skilled in English, French and Latin.

As our interest in Steetz primarily stems from the acquisition by MEL of his herbarium we have not attempted to determine in any detail the extent to which he was involved in entomological studies. However we have included in the list of publications the one work known to us which reflects his interests in entomology. This is an obituary to the entomologist Wilhelm von Winthem. Enquiries on our behalf by Prof. Dr. K. Kubitzki of HBG (in litt. 1986) to Prof. Dr. H. Strümpel

of the Zoological Institute and Museum of Hamburg also revealed that Steetz's entomological collection is considered to have been insignificant. Any specimens housed at the Museum would have been destroyed during an air raid in 1943.

EPONYMY

Steetzia Lehm., Pl. Preiss. 2: 129 (1846).

Steetzia Sonder, Linnaea 25: 450 (1853).

Achyrocline steetzii Vatke, Oesterr. Bot. Z. 27: 194 (1877). — *Helichrysum steetzii* (Vatke) O. Hoffm., Bol. Soc. Brot. 13: 25 (1896).

Aster steetzii F. Muell., Fragm. 5: 66 (1865). — *Olearia steetzii* F. Muell. l.c., pro syn.

Baccharis steetzi Andersson, Kongl. Svenska Vetensk. Akad. Handl. (1853) : 177 (1855).

Bothriocline steetziana Wild & Pope, Kierkia 10: 319 (1977).

Eupatorium steetzii Robinson, Proc. Amer. Acad. Arts 55: 36 (1919).

Helichrysum steetzii Tovey & Morris, Proc. Roy. Soc. Vict. 35: 196 (1923).

Nidorella steetzii J.A. Schmidt, Beitr. Fl. Cap. Verd. Ins. 185 (1852).

Senecio steetzii Bolle, Bonplandia 6: 296 (1859).

Sphaeranthus steetzii Oliver & Hiern in Oliver, Fl. Trop. Afr. 3: 273 (1877).

Streptoglossa steetzii F. Muell., Trans. Proc. Bot. Soc. Edinburgh 7: 491 (1863).

Vernonia steetziana Oliver & Hiern in Oliver, Fl. Trop. Afr. 3: 273 (1877).

Waitzia steetziana Lehm., Pl. Preiss. 1: 454 (1845).

Many of the above names are in synonymy and some are illegitimate.

PUBLICATIONS BY STEETZ

Details pertaining to Steetz's entomological work and his publications in local natural history and horticultural journals have been difficult to procure and therefore this list will be incomplete. However we believe that it includes all of his major botanical works. It also includes letters published in German. A summary of their content is included.

1845a. Tremandreae. In Lehmann, J.G.C. (ed.), "Plantae Preissianae" (Hamburg). 1: 211-223. [9-11 Feb. 1845.]

1845b. Compositae. In Lehmann op. cit. 1: 417-490. [pp. 417-480, 14-16 Aug.; pp. 481-490, 3-5 Nov. Reprinted as "Enumeratio plantarum quas in Australasia annis 1838-1841 collegit L. Preiss. Compositae . . . s.l.n.d.", n.v., see Stafleu & Cowan 1985.]

1847. "Revisio generis Comesperma Labill. et synopsis Lasiopetalearum et Büttneriearum in Nova Hollandia indigenarum." (Hamburg). [Preprint of Lehmann op. cit. 2: 291-315, 316-317 (?-367, including *Fleischeria*) (2-5 Aug. 1848) n.v., see Stafleu & Cowan 1985.]

1848. Nekrolog. *Entomol. Zeitung* 9(7): 194-198. – Obituary of W. von Winthem (1799-1847).

1853. "Die Familie der Tremandreen und ihre Verwandtschaft zu der Familie der Lasiopetaleen." (Hamburg). [Sept.-Oct. 1853.]

1854a. Compositae. In Seemann, B. (ed.), "The botany of the voyage of H.M.S. Herald" (Lovell Reeve: London). pp. 139-160. [Feb. 1854; part of the "Flora of the Isthmus of Panama".]

1854b. Ein deutsches Urtheil über eine englische Kritik. *Bonplandia* 2(14): 169-170. [15 July 1854.] – Titled "A German opinion of an English criticism" this letter was written as the result of a book notice in *Gard. Chron.* 1854 (No. 16): 255 in which Steetz was criticised for his long Latin descriptions. Steetz gives reasons for his approach.

1854c. *Trigonopterum* Steetz in Andersson, *Kongl. Vetensk. Acad. Handl.* 1853: 183 (1854). [c. 7 Sept. 1854.]

1854d. Dr Steetz über den Begriff von Species. *Bonplandia* 2(21): 244-246. [1 Nov. 1854.] – Steetz discusses the species concept.

1854e. Zurückweisung, Dem Redacteur der 'Bonplandia'. *Bonplandia* 2(21): 246-247. [1 Nov. 1854.] – A repudiation to the editor of *Bonplandia*. In *Bonplandia* 2(16): 188-189 (15 Aug. 1854) an anonymous German ('X') criticized Steetz for his use of Latin and long descriptions. Steetz suggests that it is a misuse of the press when a person can criticize a letter under the cloak of anonymity. He felt it was cowardice on the part of 'X', which was unworthy of a German. In a subsequent letter to *Bonplandia* 2(23): 284 (1 Dec 1854) 'X' felt that Steetz's reply was insulting, again attacked Steetz and said that the name of the signatory was irrelevant.

- 1855a. Fried. E. L. von Fischer. *Bonplandia* 3(2): 18-21. [1 Feb. 1855.] – Obituary of F.E.L. von Fischer (1782-1854).
- 1855b. Gardeners' Chronicle's 'Bad German habit'. Dem Redacteur der Bonplandia. *Bonplandia* 3(11): 147-155. [15 June 1855.] – Long letter by Steetz again defending the use of Latin and long descriptions. This followed another article in *Gard. Chron.* 1854: 804 (16 Dec. 1854). Editorials on the same subject appeared in *Bonplandia* 3(1): 1-2 (15 Jan. 1854) & 3(11): 141-142 (15 June 1855).
- 1855c. Replik. Dem Redacteur der Bonplandia. *Bonplandia* 3(13&14): 203-205. [15 July 1855.] – Defence by Steetz of his last article. The editorial in *Bonplandia* 3(11): 141-142 suggested that Steetz was guilty of a few breaches of etiquette, particularly in his criticism of Lindley, whom he believed to be the author of the articles in *Gard. Chron.*
1856. Klotzsch's Angreifer. Dem Redacteur der Bonplandia. *Bonplandia* 4(17): 280-281. [1 Sept. 1856.] – An article in the *Hamburger Garten- und Blumenzeitung* (8 March 1856) attacked Klotzsch's work on the Begoniaceae. The writer signed as "N.N.". Steetz cites from a letter he received from Klotzsch in which it is suggested the anonymous writer is the same person who attacked Steetz. Asks that the anonymous writer be revealed.
- 1857a. Klotzsch's Begoniaceen. Dem Redacteur der Bonplandia. *Bonplandia* 5(4): 60-65. [1 March 1857.] – A letter to the editor (Seemann) expressing astonishment that the writer of the anonymous letters has not been revealed in *Bonplandia*. Again suggests that he should be.
- 1857b. Compositae. In Seemann, B. *op. cit.* pp. 384-395. [Jan.-Jun. 1857; part of the "Flora of the Island of Hongkong".]
- 1857c. *Duhaldea Chinensis*, De Cand. Ein Beitrag zur Systematik der Compositae. *Bonplandia* 5(19) & 20): 305-310. [1 Nov. 1857.]
1858. *Elvira biflora*, DC. und *Unxia digyna*, Steetz. Dem Redacteur der Bonplandia. *Bonplandia* 128-131. [15 April 1858.]
1863. *Streptoglossa* Steetz in F. Muell, *Trans. Bot. Soc. Edinburgh* 7: 492-495.
1864. Compositae. In Peters, W. C. H. (ed.), "Naturwissenschaftliche Reise nach Mossambique" (Berlin). 6: 305-500.

ASSESSMENT OF STEETZ'S BOTANICAL WORK

Steetz had very strong views on taxonomic procedure. For example, in a letter to J. D. Hooker (8 November 1856, K) he stated in part:

"Moreover you speak of your intention to make me partake of the further distribution of your precious Indian plants . . . I fully comprehend what you say about your provisional identifications. I know the difficulties, which arise within the careful examination of every order of great extension, because many of them still want a sound basis at time. Even the great order of Compositae, so well worked up by Cassini, Lessing and de Candolle, needs a careful revision. Every detection of an erroneous principle in distributing Tribus, genera and species requires a great sacrifice of time, because it is then necessary, to re-examine a great deal of so named good or well known species. Most of the errors are committed by the first publisher and then they have been repeated from one author to another. Such errors exist copiously even in the Floras of our own countries, and are perpetuated by so many compilers. So Dr. Reichenbach fil. just now has showed that *Nigritella angustifolia* Rich. is a true *Gymnadenia*, and Dr. Alefeld has at first seen, the characteristic nectariferous glands in our *Pyrola secunda* L. It is true the ignorances of such differences in the structure of the flower does not prevent to recognize a plant so well known, for every plant has its proper habit, which everytime coincides with his essential characters. But for stating the principles in confining natural orders, tribus, genera and species it is necessary to examine accurately every part of the flower and fruit. Such principles, concerning the whole of the vegetable Kingdom still fail, because the different orders are not worked up in an homogeneous manner,

and the affinity of each is not found out in a satisfactory degree. Therefore your extensive introductory essay, and your remarks to every order, and every genus, which I admire in the first Volume of your excellent *Flora Indica* are a real advancement in science, and I expect anxious[ly] the continuation of this valuable work, as I find in it often the answer to such questions. The science of our present time is not contented with the faculty of naming some thousand plants, of propagating errors by compilation, or of making species beyond of all reason. Our systematic Botany requires the accuratest examination of not only of every part of a plant but also with regard of its allies for the purification of our natural system, particularly of the hitherto neglected orders of it, and so to find out the general law for mutual affinity, which till now is still a 'pium desiderium'. Indeed, many botanists, who are wanting the necessary literary materials and a large Herbarium with original specimens, but who have time enough to herbarize in their vicinity, would do better, to study the plants in their own *Flora* with accuracy, than to describe exotic plants and to much multiply, as so often occurs, the great dust of synonymy in Botany. In this way, I should think, they would satisfy as well as to themselves, as to the claims of science.' [(C)RBG Kew]

Steetz's conviction that detailed Latin descriptions of new species, often accompanied by explanatory notes, are preferable to diagnoses led to considerable public conflict. Shortly after publication of Steetz's (1854a) treatise on the Compositae of Panama there appeared a note in *Gardeners' Chronicle* in which the author (Anonymous, 1854a) criticized Steetz for having "The bad German habit of attaching to every supposed novelty a long Latin description, four-fifths of which are superfluous". Steetz (1854b) defended his approach but in August of that year another anonymous author, a German botanist signing as 'X', also criticized him for the same reasons. This marked the beginning of a series of often scathing letters in *Bonplandia* by Steetz and other botanists, including the anonymous 'X'. Full reference to the articles are given in Sinkora & Short (1987). Although the articles primarily revolve around the same theme, that of descriptive format, Steetz does discuss taxonomic procedure in general terms (Steetz 1855b) and the problem of deciding generic limits also arose when the anonymous writer attacked J. F. Klotzsch for his recognition of numerous segregate genera in *Begonia* L. Our (Sinkora & Short, 1987) separate report of this conflict, published because of both its botanical interest and the personality clashes involved, includes usually full translations into English of the letters published in *Bonplandia* plus copies of other publications applicable to the arguments put forward by Steetz, his supporters and his adversaries. The conflict seems to have been laid to rest, at least publicly, with an editorial in *Bonplandia* (Anonymous, 1857). The article suggests that the anonymous letter writer was J. G. C. Lehmann.

Steetz's penchant for detailed descriptions was to some extent a result of his meticulous nature, which is evident from the way in which he labelled herbarium specimens, and his verbose manner of writing, evident in his many letters. However he was primarily concerned with making accurate identifications of plants easier, an approach which is surely commendable.

The above conflict shows that Steetz was a meticulous observer but sheds little light on the acceptability or otherwise of his taxonomic work. As noted by Steetz (1854d) the concept of a plant species is a purely human one. It follows that concepts of species and other taxa are very much a matter of opinion. Even if theoretical concepts are agreed upon, the limits of taxa as perceived at one point in time may well be re-defined as more and better collections become available and experimental work is carried out to establish the effect of environmental parameters on plant morphology. Steetz was aware of these problems but even if he was not it is only fair that in assessing a past botanist's work the views of his contemporaries should be given much consideration.

Steetz's taxonomic work was generally well regarded by contemporary botanists and it is to his credit that in more modern treatments a considerable number of taxa described by him are maintained.

Despite the adverse comments by others on the length of his descriptions Steetz's (1854a) work on the Compositae of Panama was otherwise well received by contemporary taxonomists. In his review of the work the author (Anonymous, 1854a) who criticized Steetz for his "bad German habit" also referred to the "real talent" of the German botanists. In a subsequent note (Anonymous, 1854b) on the same matter the author said, of Steetz, that he "really had no intention to say anything disagreeable to the learned gentleman" (p. 804). His negative comments only pertained to the descriptive format. (The anonymous author of the articles in *Gardeners' Chronicle* was believed by Steetz to be John Lindley, editor of the journal). Fürnrohr (1854), writing about the same work, was similarly complementary to Steetz, referring to him as an accurate research worker. In his treatment Steetz recognised one new genus and 11 new species. Treatments in Woodson *et al.* (1975) have five of Steetz's species in synonymy and two transferred from where Steetz placed them in *Eupatorium* L. to *Ayapana* Spach.

Steetz's (1853) paper on the affinities of the Tremandraceae ("Tremandreae") and the Sterculiaceae ("Lasiopetaleae") was also well received. An anonymous author (1854c) noted that "The whole subject is argued in a satisfactory, though perhaps rather diffuse manner" (p. 60). In a letter to Bentham (21 August 1854, K) Steetz thanked him for "judging with the greatest indulgence my little pamphlet on the affinities of Tremandreae and Lasiopetaleae". Schlechtendal (1853) praised the work, and an unsigned review of the work in *Bonplandia*, probably by Seemann (Anonymous 1854e) the editor, was also complimentary, noting that Steetz was one of the most discerning, specialised systematists. The anonymous author was, however, critical of the length of the work and the lack of consideration of Robert Brown's work, the latter believing the "Tremandreae" to belong to the "Polygalaeae". Cronquist (1981) refers the Tremandraceae to the order Polygalales, the Sterculiaceae to the Malvales.

Steetz's work on the Tremandraceae, Sterculiaceae and *Comesperma* for *Pl. Preiss.* were not substantially modified by Bentham (1863 a,b,c). His treatment of *Tetradthea* Sm. however does not agree well with Thompson's (1976) treatment of the genus although given the variable nature of *T. hirsuta* Lindl., to which Thompson refers three of Steetz's species and two of his varieties, this is understandable. In contrast to his treatment of the afore-mentioned groups, Steetz's (1845b) treatment of the Compositae suffered extensive modification at the hands of Bentham (1867), particularly in regard to generic concepts. However, Bentham's classification of the Australian Compositae, particularly the Inuleae, was at variance with those of other contemporary botanists, including Asa Gray and Nicolai Turczaninow. Both of these botanists had similar generic concepts to Steetz and recent work (Short 1983, 1986) supports their views. The Australian genus *Streptoglossa* Steetz (Compositae: Inuleae), published posthumously in a work by Mueller (1863), is still recognised.

Steetz's final major work, that of the Compositae in Peter's *Naturw. Reise Mossambique* has proved to be the most unaccepted one. We have not seen any contemporary reviews but it is evident from the works by Wild (1967, 1969, 1975, 1978, 1980), Jeffrey (1968), Pope (1975) and Wild & Pope (1977a,b) that the majority of the species described as new by Steetz have been placed in synonymy. Similarly only three of the genera described in that work for the first time are currently recognised, i.e. *Adelostigma*, *Hypericophyllum* and *Pleiotaxis*. Six of his genera are commonly reduced to synonymy under *Vernonia* Schreb. although Merxmüller (1954) recognised *Gongrothaminius* Steetz. *Vernonia* includes about 1000 species and generic limits in the Vernoniaeae are yet to be satisfactorily resolved (Jones 1977), so it is perhaps not surprising that Steetz's work in this group has not been accepted as well as that in other groups.

The reviewer (Anonymous, 1854c) of Steetz's (1853) work on the Tremandraceae and Sterculiaceae said that Steetz was a botanist "who devote[d] the few leisure moments his profession afford[ed] to the pursuit of his favourite study of botany with great zeal and success" (p. 59). We must concur with these sentiments.

HERBARIUM

ACQUISITION OF STEETZ'S HERBARIUM BY THE NATIONAL HERBARIUM OF VICTORIA

Mueller (1888, p. 212), in a general article about the Melbourne Herbarium, stated that in "about 1859 Dr Steetz's important collections were added by departmental purchase". However this date is erroneous. Steetz's herbarium was not obtained until after his death in March 1862. In an unpublished memorandum to the Chief Secretary, dated 31 March 1863, Mueller (1863a) said:

"I have the honour to solicit that you will be pleased to place at the disposal of the Agent General of Victoria in London the sum of 80''-''- (eighty pounds Sterling), out of the vote for purchase of plants, for which, if it meets with your approval, I am desirous to secure for the museum of the botanic Garden the whole collection of dried plants formed by the late celebrated Dr. Steetz of Hamburg, comprising fifteen large cases. These collections will be highly valuable for facilitating the scientific work of my office, and form a permanent important addition to our collections at very moderate costs.

Should you be pleased to approve my suggestion I would beg to request that the sum (above named) may be rendered available through the Agent General to G. T. Siemssen Esq. of Hamburg, the trustee of the widow of Dr. Steetz."

Subsequent internal Departmental memoranda or reports by Mueller relating to the Steetz herbarium have not been located but, in a letter to George Bentham (dated 12 December 1863) Mueller (1863c) wrote that he had received the herbarium. He said in part:

"Had I been so fortunate to possess earlier the herbarium of the late Dr. Steetz, which I purchased, it would have rendered my work amongst the Myrtaceae in general easier & safer and in [words illegible] in all the investigations of West Austral. plants because the collections of my late friend contains *a very rich set of Preissian plants*. I received this treasure only last week and was doubtful whether I should send the Preissian Leguminosae and Myrtaceae at once also. I have retained them however for the present, for if you consult Sonder's set, it will be an unnecessary risk to send Steetz's set also; if you however desire them they shall be forwarded to you also. As however the whole of the Steetzian herbarium will be incorporated, you will receive in future the Preissian & Sieberian specimens along with the rest. The Steetzian Collection advances my herbarium considerably in species & particularly in specimens. As Steetz collected for more than 30 years he accumulated a good many valuable plants, to which he seems to have added many of Professor Lehmann's relicts. The herbarium is *extremely rich in Ecklon & Zeyher plants*, also Moritz's [= Moritz's] South American collections, Vahls arctic plants, Turczaninow's Russian, Rochel plants of the Banat, and many other important . . . [bottom line illegible on microfilm, absent on photocopy]. . . Short's North American collections. In all it contains 418 packages so that my herbarium approaches near to 2,000 fascicles . . ."

Thus it has been established that Steetz's herbarium was acquired in 1863, apparently reaching Melbourne in December of that year.

CONTENT AND IDENTIFICATION OF COLLECTIONS

A. GENERAL (tables 1 to 5)

The National Herbarium of Victoria contains in excess of one million specimens. Scattered amongst these are the collections that once constituted the Steetz herbarium. As we have no detailed documentation of its original content it was necessary to generally survey our holdings for Steetz specimens. Our perusal of published works and the examination of correspondence between Steetz and other botanists (held at GH, HAL, K, MEL etc., see appendix) also helped in this task. As Steetz was particularly interested in the Compositae much time was spent examining our collections of this family.

The total size, i.e. the number of collections, of the Steetz herbarium is unknown, Mueller (1863b) only noting that it consisted of 15 large packing cases.

Table 1. Examples of Australian flowering plant collections in the Steetz Herbarium.
An * preceding a MEL number indicates that the collection is, or is possibly, a type.

ORIGINAL SOURCE	STEEZ LABEL	TAXON	MEL NUMBER
Bauer, F.L. (1760-1826)	"In Novae Hollandiae ora intra tropicum, prope flumen Endeavour leg. cl. Ferd. Bauer, recepti e herbario palatino Vindobonensi, 1847."	<i>Comesperma secundum</i> Banks ex DC.	*1539806
Blandowski, J.W.T.L. (1822-c. 1880)	"Helichrysum Blandowskianum mihi. mss. Port Adelaide. Coromandel Valley ad Sturt-River. leg. Blandowsky. N. 178."	<i>Helichrysum blandowskianum</i> Steetz ex Sonder	*1544518
"	"Inter Port Adelaide et Hahndorf. 22 Sept. 1849 leg. Blandowsky misit 1850."	<i>Cyclagyne canescens</i> Benth. (= <i>Swainsona oroboides</i> F. Muell. ex Benth.)	1544516
Drummond, J. (1784-1863)	"In Nova Hollandia, ad flumen Swan-River leg. cl. Drummond, collectieus No. 106, misit amicus cl. Turczaninow ipse, 1848."	<i>Thomasia triloba</i> Turcz.	*1539808
"	"1852" original label "Nova Hollandia, Drummond coll. IV n. 199" in unknown hand. Presumably ex herb Turczaninow.	<i>Helipterum chlorocephalum</i> (Turcz.) Benth.	*109148
Gunn, R.C. (1808-1881)	"In insula van Diemen leg. cl. Gunn, emi a Leiboldt, qui plantain ex Anglia attulit, sine nomine, 1884."	<i>Drosera binata</i> Labill.	96182
"	"In insula van Diemen leg. cl. Gunn. (Herb. Gunnian. No. 510) misit cl. Hooker, ded. amicus cl. Zuccarini, 1844."	<i>Lagenophora gunniana</i> Steetz (= <i>Lagenifera huegelii</i> Benth.)	*1543542
Labillardière, J.J. H. de (1775-1834)	"In insula van Diemen leg. cl. Labillardière ipse! specimina haecce authentica benevole mecum communicavit amicus cl. Sonder, 1843."	<i>Leptorhynchos squamatus</i> (Labill.) Lessing	*1543432
Lawrence, R.W. (1807-1833)	"In insula van Diemen leg. cl. Lawrence, misit cl. Hooker, ded. amicissimus cl. Beatus Zuccarini, 1844."	<i>Leptorhynchos squamatus</i> (Labill.) Lessing	1543432
Leiboldt Preiss, J.L. (1811-1883)	"In insula van Diemen lectam en Anglia attulit Leiboldt; emi 1844." "In Nova Hollandia, (Swan-River Colonia) in arenosis ad fluvium Cygnorum leg. cl. Preiss. (Herb. Preiss. No. 13.) emi 1843."	<i>Tetradthea pilosa</i> Labill. <i>Waitzia corymbosa</i> Wendl var. <i>wendlandiana</i> Steetz	1007960 *1539406
"	"In Nova Hollandia, (Swan-River Colonia) in limosis porrectis illustribus sylvae haud procul a praedio rustico cl. J. Moore, terrae superioris leg. cl. Preiss. (Herb. Preiss. N. 72) emi 1843."	<i>Siemsenia capillaris</i> Steetz [= <i>Podolepis capillaris</i> (Steetz) Diels]	*1539405
"	"In Nova Hollandia australi-occidentali cis fluvium Gordon leg. cl. Dr. Preiss. (Herb. Preiss. N. 209) emi 1843."	<i>Calothamnus preissii</i> Schauer	*1542050
"	"In Nova Hollandia, (Swan River Colonia, prope Albany) leg. cl. Dr. Preiss. (Herb. Preiss. N. 838) emi 1843."	<i>Pultenaea aspalathoides</i> Meissner	*35088
"	"In rupestris ad fluvium Canning (Darlings' range) in Nova Hollandia australi, leg. cl. Dr. Preiss; emi 1843. (Herb. Preiss. N. 1027.)"	<i>Labichea diversifolia</i> Meissner [= <i>L. lanceolata</i> Benth. ssp. <i>diversifolia</i> (Meissner) J.H. Ross]	*626657
"	"In arenosis sylvae ad sinum regis Georgii III in Nova Hollandia occidentali mense Octobr. 1840 leg. cl. Preiss; emi 1843." Numbered as "1316" on separate label.	<i>Tetradthea hispidiissima</i> Steetz	*1007872
"	"In Nova Hollandia (Swan-River Colonia) in umbrosis saxosis ad montem Mathilde, distr. York. leg. cl. Preiss. (Herb. Preiss. N. 1662) emi 1843."	<i>Fleischeria pubens</i> Steudel (= <i>Sida calyxhymenia</i> Gay ex DC.)	*47656

"	"In Nova Hollandia, ad flumen Swan-River, locis arenosis umbrosis sylvae prope oppidulum Perth. d. 13 Maji 1839 leg. cl. Dr. Preiss. (Herb. Preiss N. 1987) emi 1843." Type of <i>D. primulacea</i> Schlott.	<i>Drosera erythrorhiza</i> Lindley	*96246
"	"16. <i>Hibbertia montana</i> Steudel", Numbered as "2135" on separate label.	<i>Hibbertia montana</i> Steudel	*612821
"	"In Nova Hollandia, (Swan River Colonia, in planitie arenosa Quangen, distr. Victoria) leg. cl. Dr. Preiss. (Herb. Preiss. N. 2438) emi 1843."	<i>Dodonaea pinifolia</i> Miq.	*84125
Sieber, F.W. (1789-1844)	"In Nova Hollandia leg. Sieber; emi ab amico Ecklon, 1836." Fl. mixta No. 627.	<i>Diuris elongata</i> Sw. (= <i>D. punctata</i> Smith)	1542041
Siemssen, G.T.	"In insula Diemen prope Hobart-Town leg. deditque amicissimus Theodor Siemssen, 1838; (sine nomine)."	<i>Eurybia ericoides</i> Steetz [= <i>Olearia ericoides</i> (Steetz) N.A. Wakefield]	*1539804
"	"In Nova Hollandia lectam attulit amicissimus Theodor Siemssen e Port-Jackson, mecumque communicavit sine nomine, 1838" & "e Nova Hollandia (Port Jackson)";	<i>Aster siemsseni</i> F. Muell. [= <i>Olearia viscidula</i> (F. Muell.) Benth.]	*1543224 & *1543223
"	"In Nova Hollandia australi ad Port Adelaide leg. deditque amicus Theodor Siemssen, 1839,"	<i>Stenantha conostephioides</i> Sonder [= <i>Astroloma conostephioides</i> (Sonder) Benth.]	*658098
Cultivated	"In horto Berolinensi cultam, recepti e herbario Kohlmeyeriano, sub falso 'Thomasinae quercifoliae' nomine, emi 1837,"	<i>Thomasia solanacea</i> Gay	1539807
"	"In horto Halensi cultam, ded. amicus Morsch, 1826."	<i>Thomasia solanacea</i> Gay	1539807
"	" <i>Ramulus Waitzia corymbosae</i> Wendland. ex specimine unico authentico, a cl. auctore ipso in horto Herrenhusano culto, quem cl. Wendland filius ex herbario patris ipsius benevole communicavit, 1844."	<i>Waitzia corymbosa</i> Wendl.	*1539406

Table 2. Examples of Non-Australian flowering plant collections in the Steetz Herbarium.
An * preceding a MEL number indicates that the collection is, or is possibly, a type.

COUNTRY	ORIGINAL SOURCE	STEEZ LABEL	TAXON	MEL NUMBER
Austria	Bartling, F.G. (1798-1875) Hoppe, D.H. (1760-1846)	"flor. austriacae herbar, ded. Dr. Comien 1833." A label, in unknown hand, has Bartling as the collector. "1850." Label in Buek's hand with "L. in alpe Pasterze e manu Hoppe/J. N. Buek" Also blue label with "Dr. Steetz Herb."	<i>Viola alpina</i> Jacq. <i>Hieracium murorum</i> L.	1542940 681772
Brazil	Sieber, F.W. (1789-1844) Nonnenprediger	"in alpe Glockner Carinthiae leg. cl. Sieber, emi ab amico Ecklon, 1836." No. 462 on Sieber label, perhaps Florae austriacae. "prope Rio Janeiro in Brasilia leg. cl. Nonnenprediger ded. amicus Dr. Buek 1838."	<i>Anemone baldensis</i> L. <i>Vernonia discolor</i> Less.	1540823 1542047
Canada	Martin Meatzel Weitz, S.	"Therum examinada! ded. Pastor Wenck, 1855. Okak in Labrador leg. cl. Martin." "videtur var. sepalis 5 (non 6)." Label in unknown hand has "Hebron. Labrador. ex herbar. Wenck. leg. cl. Meatzel." "Prope Okak in Labrador leg. Weiz ded. Wenck 1855."	<i>Anemone borealis</i> Richards (= <i>A. parviflora</i> Michx.) <i>Anemone borealis</i> Richards (= <i>A. parviflora</i> Michx.) <i>Erigeron droebachensis</i> Mueller (= <i>E. acris</i> L.)	1540818 1540818 681766
Chile	Philippi, ?F. or R.A.	"Philippi 1858." Label, in unknown hand, has "In maritimis prov. Valparaiso."	<i>Senecio bahioides</i> Hook. & Arn.	1541369
China	Siemssen, G.T.	"Heliophyllum indicum Cand./ Cand. prod. T. 9 p.556 No. 21. Comp. icon." Label, in unknown hand, has "Canton, 1850. Th. Siemssen."	<i>Heliotropium indicum</i> L.	1543863
Columbia	Moritz, J.W.K. (1797-1866) "	Labeled, in unknown hand, "Dr. Steetz Herb." Also with labels in the hands of Klotzsch and Moritz. "In Columbia Americae aequi noctialis, provincia a Merida leg. cl. Moritz, (herb. Moritz No. 1426) emi ab amico Thorey, s.n. <i>Pectis</i> . 1846."	<i>Aster marginatus</i> Kunth. <i>Pectis elongata</i> Kunth.	1540815 1545429
Cuba	Otto, C.F.E. (1812-1885) Gundlach, J.C. (1810-1896)	"Label, in unknown hand, with "1106. Elephantopus tomentosus L. Columbia. E. Otto." Blue label with "Dr. Steetz Herb." "In insula Cuba, prope Matanzas leg. Dr. Gundlach; determinavit distribuitque s. numero 121 cl. v. Schlechtendal, recepti 1848."	<i>Elephantopus tomentosus</i> L. <i>Wedelia carnosae</i> Pers.	1545426 1542045
Czechoslovakia	Wimmer, ? C.F.H. (1803-1868)	"1855." Label in Buek's hand with "L. alte Schles. Baude in Sudetis e manu Wimmer./ J.N. Buek." Also blue label with "Dr. Steetz Herb."	<i>Hieracium sudeticum</i> Tausch	681775
Egypt	Sieber, F.W. (1789-1844)	"flor Aegyptiaca (Damiette) leg. Sieber ded. Dr. Buek. 1835."	<i>Utricularia inflexa</i> Forsskal	90285
Ethiopia	Schimper, G.H.W. (1804-1878)	"in Abyssinia leg. cl. Schimper."	<i>Sphaeranthus angustifolius</i> DC.	1542029

France					
	Buchinger, J.D. (1803-1888)	"in Alsatia prope Argentoratum leg. cl. Buchinger, recepti e herbario beati Dr. Comien, 1833."	<i>Aster salignus</i> Willd.	1540804	
	Huguenin, A. (1780-1860)	"Dr. Sonder 1855." Blue label with "Dr. Steetz Herb." Label, in Sonder's hand, with "Chambéry/Huguenin."	<i>Hieracium preadtum</i> Vill. ex Gochnat	681777	
	Robert, ? G.N. (1776-1857)	"In alpihus Gallicis (S.), leg. misitque cl. Dr. Robert, Parisiensis, 1846."	<i>Erigeron alpinus</i> L.	681764	
	Winthem, W. von (1799-1847)	"prope Massiliam in Gallia australi lectam ded. amicissimus v. Winthem, 1826."	<i>Anemone coronaria</i> L.	1540822	
Galápagos Islands	Andersson, N.J. (1821-1880)	"leg. deditque Dr. Andersson, 1856." Label in Andersson's hand has "Ex ins. Galapagos/Andersson"	<i>Encelia hispida</i> Anderss.	*1543312	
	"	"1858. ded. legitque Andersson." Label in Andersson's hand has "Ins. Indefatigable, Galapagos 1852/ And." Fig. 7.	<i>Pectis subsquarrosa</i> (Hook.f.) Schultz-Bip.	1543494	
	"	Undated, original latin description of <i>Trigonopterum</i> in Steetz's hand.	<i>Trigonopterum ponteni</i> Andersson ex Steetz (= <i>Macrea tarictifolia</i> Hook.f.)	*1543309	
Germany	Comien	"Prope Hamburgum leg. beatus Dr. Comien; recepti e herbario inpsius, 1833."	<i>Helichrysum arenarium</i> Moench.	1539419	
	Deisch, J.G. (1787-1868)	"Prope Lizelburg, haud procul ab Augsburg in Bavaria leg. cl. Deisch; recepti e herbario Kohlmeieriano, 1837."	<i>Helichrysum arenarium</i> Moench.	1539419	
	Flügge, J. (1775-1816)	"sine loco natali et sub falso 'Erig. villarsii' nomine recepti e herbario amici Milde, 1835; cui dederat cl. Dr. Flügge."	<i>Erigeron acris</i> L.	681761	
	Giesecke, ? C.L.	Original label "aus Flügges Doubletten." "prope Halam leg. deditque amicus Giesecke, 1826."	<i>Tripolium vulgare</i> Nees (= <i>Aster tripolium</i> L.)	1540809	
	Häcker, G.R. (1789-1864)	"Ad ripas fluminis Trave prope Travemünde, leg. misitque cl. Häcker, 1841."	<i>Tripolium vulgare</i> Nees (= <i>Aster tripolium</i> L.)	1540797	
	Hampe, G.E.L. (1795-1880)	"Hampe 1844." label in unknown hand has "Hieracium alpinum L./ Fl. Harcyn." Also label with "Dr. Steetz Herb."	<i>Hieracium alpinum</i> L.	681782	
	Hartung, ? N. Hübener, J.W.P. (1807-1847)	"Dr. Hartung herb. bot. Berolin. 1830." "prope Hamburgum ad ripam Albis (ad Blankenese) leg. deditque Dr. Hübener 1835 sub falso: Asteris aestivi nominæ." "Flor. Hamburg. (Einsbüttel) herbar. Dom. Kohlmeier; emi 1837."	<i>Aster tradescanti</i> L. <i>Aster salignus</i> Willd.	1540798 1540802	
	Kohlmeier (? - 1860s)	"Flor. Hamburg. (Einsbüttel) herbar. Dom. Kohlmeier; emi 1837."	<i>Potamogeton praelongus</i> Wulfen	613356	
	Kroeber Minder	"flor Kayerslautern, ded. Kroeber. 1828" "Ad litora maris baltici prope Travemünde leg. deditque amicus beatus Minder, 1826."	<i>Utricularia intermedia</i> Hayne <i>Tripolium vulgare</i> Nees (= <i>Aster tripolium</i> L.)	90303 1540810	
	Müller, R.	"Müller Blankenburg 1842." Label in unknown hand with "Rosstrappe 1842, Juni, R. Müller." Also label with "Dr. Steetz Herb."	<i>Hieracium setigerum</i> Tausch	681776	
	Rablick, J. (1787-1863)	"Grabowski, 1842." Label in unknown hand with "Elbenwiese, Josephine Rablik." Also label with "Dr. Steetz Herb."	<i>Hieracium decipiens</i> Tausch (= <i>H. nigrescens</i> Willd.)	681787	
	Schlüter, ? F.	"prope Halam legit deditque amicus Schlüter, 1827."	<i>Tripolium vulgare</i> Nees (= <i>Aster tripolium</i> L.)	1540809	

Schmidt, J.A. (1823-1905)	"Schmidt 1851." Label in Schmidt's hand with "In der Gartenschenke bei Göttingen, Juni 50, J.A. Schmidt."	<i>Hieracium pratense</i> Tausch	681779
Sonder, O.W. (1812-1881)	"Specimen hoc prope Hamburgum ad ripam Albes leg. deditque amicus cl. Sonder, 1850. (Verisimiliter ex horto effugitum.)"	<i>Aster</i> sp.	1539427
"	"prope Hamburgum ad ripam Albes (Unweit Teufelsbrücke) legit deditque amicissimus Sonder, 1840."	<i>Aster salignus</i> Willd.	1540801
Steetz, J. (1804-1862)	"ipse legi exemplaria duo prope Hamburgum in paludosis turfosis Eppendorfi posi. die 27 Julii 1835."	<i>Utricularia intermedia</i> Hayne	90303
Thorey	"Thorey 1838." Label in unknown hand with "Hieracium praealtum Will./ florentinum Willd.?/ Katzenstein."	<i>Hieracium praealtum</i> Vill. ex Goechnat	681778
Treviranus, L.C. (1779-1864)	"in valle Ahrthal, haud procul a Bonn ad Rhenum leg. cl. Prof. Treviranus (in Bonn) mecumque benevole communicavit 1840."	<i>Lynosyris vulgaris</i> Cass. ex Less. [= <i>Aster lynosyris</i> (L.) Bernh.]	1540814
Weihe, C.E.A. (1779-1834)	"in Guestphalia prope Herford leg. cl. Weihe; recepti e herbario Kohlmeyeriano, 1837."	<i>Erigeron acris</i> L.	681758
Cultivated	"in horto Halensis cultum ded. amicus Schlüter, 1826."	<i>Aster tradescanti</i> L.	1539426
"	"in horto Hamburgensis cultum recepti e herbario amici Milde, 1835"	<i>Aster tarifflorus</i> L.	1539420
"	Labelled in unknown hand with "B. G. Hamb. 1827." Also with "Dr. Steetz Herb."	<i>Aster tradescanti</i> L.	1539425
Greece	"In Gracia prope Naupliam leg. cl. von Spruner, misitque 1846."	<i>Anemone hortensis</i> L.	1540825
Greenland	"in Groenlandia leg. cl. Achtraich."	<i>Antennaria alpina</i> Gaertn.	1547424
"	"In Groenlandia detexit, leg. mecumque benevole communicavit amicus cl. Vahl filius, 1842."	<i>Taraxacum phymatocarpum</i> J. Vahl	*1538841
Guyana	"in Guiana anglica, ad ripas fluminis Essequib leg. cl. Rich. Schomburgk mecumque benevole communicavit e herb. Berol. amicus Klotzsch, 1853."	<i>Uxixia camphorata</i> L.f. [= <i>Melampodium camphorata</i> (L.f.) Benth.]	1550999
"	Blue label with "Dr. Steetz Herb." in unknown hand. Original label, in unknown hand, with "1033. Pterocaulon alopecuroideum De Cand. Guiana angl. Rich. Schomburgk."	<i>Pterocaulon virgatum</i> DC	1542030
Hong Kong	"prope Hong Kong leg. cl. Hance, ded. Seemann, 1857."	<i>Vernonia solanifolia</i> Benth.	677433
"	"in Hong Kong leg. cl. Luetckens ded. Kohlmeyer, 1858."	<i>Blumea crinita</i> Arn.	611796
Hungary	"Prope Hortiath in Rumelia leg. cl. Frivaldszky, emi ab amicissimo cl. Rochel, 1841."	<i>Anemone apennina</i> L.	1540816
"	"In Hungaria sive Mähren prope Monitz lectiam misit beatus collector as Hochstetter.	<i>Tripolium vulgare</i> Nees (= <i>Aster tripolium</i> L.)	1540796
"	"in Hungaria prope Stirnberg, leg. cl. Hartlinsky."	<i>Antennaria carpathica</i> R.Br.	1547423
"	"In Hungaria circa Gikos in Comitatu Perthinensi in arenosis sylvaticus leg. misitque cl. Rochel 1841."	<i>Helichrysum arenarium</i> Moench.	1539418

India	Thomson, T. (1817-1878)	"1856." Printed label with handwritten locality "Kashmir". Fig. 6.	<i>Anemone falconeri</i> Thomson	*1540821
	Wallich, N. (1786-1854)	"e specimene Wallich."	<i>Epaltes pygmaea</i> DC.	1542028
Indonesia	Unknown	"Blumea glandulosa Cand. in eadem folio sine numero." Also label with "East India. Dr. Steetz Herb." Fig. 3.	<i>Blumea glandulosa</i> DC. (= <i>B. lacera</i> DC.)	611821
	Werner	"In insula Java, prope Semarang leg. amicus Werner, dedicate sine nomine, 1846."	<i>Sphaeranthus microcephalus</i> Willd. (= <i>S. phenocleoides</i> Oliver & Hieron)	1542043
Italy	Dolliner, G. (1794-1872)	"prope Viennam leg. cl. Dolliner, ded. amicissimus Sonder, 1840."	<i>Anemone hackelii</i> Steudel (= <i>A. halleri</i> All.)	1540824
	Kützing, F.T. (1807-1893)	"In Italia leg. dedicate amicus cl. Kützing, s.n. Gnaphal. angustifolii 1846."	<i>Helichrysum angustifolium</i> DC.	1539412
	Milde, ? J.	"Prope Sorento in Italia inferiori leg. amicus Milde die XXIV mensis Maji 1831; recepi e herbario ipsius, 1835."	<i>Helichrysum angustifolium</i> DC.	1539414
	Müller, U.I.	"in insula Sardinia leg. cl. Müller, emi a Dr. Hübener, 1835." Accompanied by printed label with "In agris prope Cagliari Sardiniae. Febr. U.I. Müller."	<i>Anemone coronaria</i> L.	1540822
	Salzmann, P. (1781-1851)	"Prope Ajaccio in insula Corsica leg. cl. Salzmann, recepi e herbario amici Milde, 1835."	<i>Helichrysum angustifolium</i> DC.	1539430
	Seelos, G. (1831-1911)	"Leybold, 1855." Original label in unknown hand with "Gnaphal. carpathic./ Schleeren 6000' / Dol./ G. Seelos."	<i>Antennaria carpathica</i> R. Br.	1547422
	Sieber, F.W. (1789-1844)	"Prope Bastia in insula Corsica leg. cl. Sieber, ded. amicus Bockmann, 1838."	<i>Helichrysum angustifolium</i> R. Br.	1539430
	Tommasini, M.G.S. (1794-1879)	"in insula Corsica leg. cl. Sieber; emi ab amico Ecklon, 1836."	<i>Anemone hortensis</i> L.	1540826
Macedonia	Frivaldszky von Frivald, E. (1799-1870)	"In Istria australis leg. cl. Tommasini, ded. amicus cl. Sonder, 1841."	<i>Anemone hortensis</i> L.	1540826
	Sieber, F.W. (1789-1844)	"In Macedonia leg. cl. Frivaldszky, emi ab amico Ecklon s.n. 'Bacharis viscosa' 1836."	<i>Psiadia balsamica</i> DC. (= <i>P. trinervia</i> Willd.)	1542044
Mexico	Liebmann, F.M. (1813-1856)	"In insula Mauritius leg. cl. Sieber; emi ab amico Ecklon s.n. 'Bacharis viscosa' 1836."	<i>Vernonia leiocarpa</i> DC.	1542027
	? Lessing, C.F. (1810-1862)	"In Mexico prope Mirador in Savannis, altitudinae pedum 3500 leg. amicus cel. Liebmann, necumque benevole communicavit, 1845, sine nomine."	<i>Epaltes mexicana</i> Less.	*1542049
	Schaffner, W. (? -1882)	"Capitula dissecta. Epaltes ? mexicanae Lessing. e speciminae authentica."	<i>Stevia puctata</i> Schultz-Bip. (= <i>S. serrata</i> Cav.)	681759
Morocco	Broussonet, P.M.A. (1761-1807)	"1856." Label, possibly in Schultz-Bip.'s hand, with "Mexico auf sonnigem Sandboden um San Augustin del Palmar, Sept. 1854; Schaffner."	<i>Nolletia chrysocomoides</i> (Desf.) Cass.	1546647
Mozambique	Peters, W.C.H. (1815-1883)	"e speciminae a cl. Broussonet circa Mogador lecto, a cl. Alph. de Candolle, fil. miqueum benevole communicata." "No. 25. hb. Peters. Nidorella microcephala mihi."	<i>Nidorella microcephala</i> Steetz	*1542038

New Zealand	Sinclair, A. (c.1796-1861)	With printed label "Brachyglottis repanda, Forst. Northern Island, New Zealand. Andrew Sinclair, Esq., M.D./ From William Gourlie, Glasgow." Also with the label "Dr. Steetz Hamburg, with W. Gourlie's kind regards," Fig. 8.	<i>Brachyglottis repanda</i> Forster & Forster f.	1540568
Norway	Boek Vahl, J.L.M. (1796-1854)	"in Norvegia prope Dovre leg. misitque Dr. Boek in Kongsberg."	<i>Erigeron alpinus</i> L.	681762
Panama	Seemann, B. (1825-1871)	"In Finmarkia prope Hamertst leg. misit que amicus cl. Vahl filius, 1842." "In Panama leg. deditque Seemann, 1852."	<i>Saussurea alpina</i> DC. <i>Melananthera micropophylla</i> Steetz	1540774 *677432
Poland	Buek, J.N. (1779-1856)	"Wedelia carnosa Rich. var. 1852, leg. deditque Seemann in Panama."	<i>Wedelia carnosa</i> Rich.	1542033
Romania	Bachofen	"in Silesia prope Vratislaviam lectos misit amicus cl. Buek in Francofurt ad Viadrum, 1839."	<i>Aster salignus</i> Willd.	1540803
	Baumgarten, J.C.G. (1765-1843)	"In Banatu leg. cl. cl. Bachofen, emi ab amico cl. Rochel, 1841."	<i>Erigeron acris</i> L.	681761
Senegal	Heuffel, J.A. (1800-1857)	"In Transylvania leg. cl. Baumgarten; emi ab amico cl. Rochel, 1841."	<i>Erigeron alpinus</i> L.	681763
South Africa	Lellèvre	"In Transylvania in subalpinus versus alpe in Retyczat, mense Augusti leg. cl. auctor ipse, emi ab amico cl. Rochel, 1841."	<i>Anthemis inacrantha</i> Heuffel	*1551585
	Comien	"Sphaeranthi senegalensis de Cand. a cl. Lellèvre, in Senegalia lectae, in herb. cel. Kunth jard. reg. Berolin!"	<i>Sphaeranthus senegalensis</i> DC.	1542032
	Drège, J.F. (1794-1881)	"Exemplar monicum veresimile in Capite Bonae Spei lectum recepti e herbario beati Dr. Comien, sine nomine 1833."	<i>Helipterum speciosissimum</i> DC.	678467
	Ecklon, C.F. (1795-1868)	"In Africa australi, ad flumen Gariep leg. cl. Drège. Herb. Drège N. 2721, emi a cl. peregrinatore ipso: 1844."	<i>Epaltes gariepina</i> (DC.) Steetz	*1542031
	"	"In Capite Bonae Spei, leg. cl. Ecklon, ded. Sickmann, 1826."	<i>Leyseria gnaphalioides</i> L.	1539411
	"	"flor. Capensis leg. Ecklon, ded. v. Winthem, 1830."	<i>Utricularia capensis</i> Spreng.	90258
	"	"In Capite Bonae Spei leg. cl. Ecklon; recepti e herbario amici Miilde, 1835."	<i>Helipterum fasciculatum</i> DC. (= <i>Helichrysum sesamoides</i> Willd.)	678463
	"	"In Capite Bonae Spei leg. cl. Ecklon; ded. Dr. Ruete, s.n. Helichrysi heterophylli, 1837."	<i>Helipterum fasciculatum</i> DC. (= <i>Helichrysum sesamoides</i> Willd.)	678463
	"	"In Capite Bonae Spei, leg. cl. Ecklon, ded. amicus Prof. Lehmann, 1841."	<i>Nestera rigida</i> DC. (= N. humilis Less.)	1539416
	"	"in Capite Bonae Spei leg. cl. Ecklon ded. amicus Buek ad Francofurt ad Viadrum 1853."	<i>Helipterum filiforme</i> DC.	678464
	Ecklon, C.F. (1795-1868) & Zeyher, C.L.P. (1799-1858)	"In Capite Bonae Spei. (ad Clanwilliam, ad flumen Olifantsrivier, et prope Villam Brakfontein, mense februarit) leg. cl. Ecklon et Zeyher; emi ab amico Drège, 1845."	<i>Helipterum virgatum</i> DC.	1539410
	"	"In Capite Bonae Spei, ad montem Swellendam Berg, in Voormansbosch leg. amici cl. Ecklon et Zeyher, ded. amicus Sonder 1852."	<i>Helipterum sesamoides</i> DC. (= <i>Helichrysum sesamoides</i> Willd.)	678466

	Pappe, C. W. L. (1803-1862)	"Ad pedem montis Leonis in Capite Bonae Spei leg. misitque amicus cl. Dr. Pappe, 1843."	<i>Leyssera gnaphaloides</i> L.	1539411
	Preiss, J. L. (1811-1883)	"In Capite Bonae Spei. (Worcester) leg. cl. Preiss, die XXIV Novembri, 1838; ded. amicus Prof. Lehmann, 1841."	<i>Helipterum variegatum</i> DC.	1539409
	Sieber, F. W. (1789-1844)	"In Capite Bonae Spei leg. cl. Sieber; emi ab amico Ecklon, s.n. 'Astelma modestum Rehb.' flor cap. exs. No. 12./1836." Colln includes 'Fl. mixta No. 43'.	<i>Helipterum gnaphaloides</i> DC.	678465
	"	"in Capite Bonae Spei leg. cl. Sieber emi ab amico Ecklon 1836." Original, printed label "FL. capensis No. 253."	<i>Felicia tenella</i> Nees (= <i>F. fragilis</i> Cass.)	681760
Spain	Willkomm, H. M. (1821-1895)	"In Hispania prope Sevillam et Gades, leg. cl. Willkomm misit amicus cl. Prof. Kunze, Lipsiensis, 1846." Original printed label with "437. Bellis annua L. Sevilla et Gades."	<i>Bellis annua</i> L.	681767
Sweden	Laestadius, L. L. (1800-1861)	"in Lapponia Luleari in Alpe Njunnas leg. cl. Laestadius, misit cl. Wickström, recepti e herbario beati Dr. Comien, 1833."	<i>Erigeron alpinus</i> L.	681762
	Nyman, C. F. (1820-1893)	Original, printed label with "In Alpe Njunnas Laponniae Lulensis. Ann. 1821: L. L. Laestadius."	<i>Hieracium cymosum</i> L.	681783
	"Nyman 1844." Label, in unknown hand, with "Hieracium cymosum Lin./Holmiae." Also label with "Dr. Steetz Herb."			
Switzerland	Born Coquebert de Montbret, A. F. E. (1781-1801)	"flor. Helvet., ded. Born, 1827. . . ." "in Helvetia leg. cl. Coquebert de Montbret, recepti e herbario beati Dr. Comien, 1833."	<i>Hieracium aureum</i> Scop. <i>Anemone baldensis</i> L.	681786 1540823
	Kern, ? J. Lagger, F. J. (1799-1870)	"flor. Helvet. ded. Kern, 1829. . . ." "1850." Label, in Buek's hand, with "in Helvet. e manu Dris Lagger/ J. N. Buek."	<i>Hieracium aureum</i> Scop. <i>Hieracium bifidum</i> Koch	681785 681784
	Shuttleworth, R. J. (1810-1874)	"in Helvetia (in planitie) leg. cl. Shuttleworth recepti e herbario beati Dr. Comien, 1833."	<i>Erigeron acris</i> L.	681761
	Stein, J. C. (1776-1834)	"in Helvetia prope Frauenfeld leg. Stein, recepti e herbario Kohlmeyeriano 1837."	<i>Erigeron acris</i> L.	681758
Trinidad	Wrbna, F.	"Flor. Insulae Trinitatis. leg. Sieber; emi ab amico Ecklon 1836." Fl. Trinitatis. No. 149, collected for Sieber by Wrbna, see text.	<i>Myrcia splendens</i> (Sw.) DC. var. <i>genuina</i> Berg.	*1540721
Turkey	Boissier, P. E. (1810-1885)	"In Asia minori, in montibus Smyrnae supra Bournabat leg. cl. Boissier, dedit amicus cl. Sonder, 1851."	<i>Anthemis pectinata</i> (Bory & Chaub.) Boiss. & Reuter	1551586
U.S.S.R.	Hohenacker, R. F. (1798-1874)	"In Caucaso, territorio Elisabethpol leg. cl. Hohenacker, misit Dr. Noodt e Tiffis sub falso 'Erigeron caucasicus Stev.' nomine, 1846."	<i>Erigeron caucasicus</i> Stev. (= <i>E. pulchellus</i> DC.)	681765
	Karelin, G. S. (1801-1872) & Kirilov, I. P. (1821-1842)	"Prof. Fischer 1851." Label in Turczaninow's hand indicates the collection is from Altai and was gathered by Karelin & Kirilov. Separate label with the No. "1140."	<i>Anemone</i> sp.	1540819
	Phoebus, P. (1804-1880)	"In Siberia lectam misit amicissimus Dr. Phoebus, 1836."	<i>Anemone altaica</i> Fisch. ex Ledeb.	1540817

Rieder, J.G. von		<i>Hieracium triste</i> Willd..	681774
Turczaninow, N.S. (1796-1864)		<i>Aster tataricus</i> L.f.	1539421
Wright, C. (1811-1885)		<i>Antennaria alpina</i> Gaertn.	1547425
U.S.A.		<i>Bellis</i> sp.	681768
Beyrich, H.C. (1796-1834)		<i>Pectis filipes</i> Harvey & A. Gray ex A. Gray	*1542902
Coulter, T. (1793-1843)		<i>Aster undulatus</i> L.	1540799
Durand, E.M. (1794-1873)		<i>Aster tenuifolius</i> L.	1539423
Engelmann, G. (1809-1884)		<i>Aster tenuifolius</i> L.	1539422
Henry, T.C. (? -1877)		<i>Pericome caudata</i> A. Gray	1547421
Lüders, F.G.T. (1813-1904)		<i>Aster miser</i> L.	1540812
Mead, S.B. (1798-1880)		<i>Aster sericeus</i> Vent.	1540805
Short, C.W. (1794-1863)		<i>Aster diversifolius</i> Michaux (= <i>A. undulatus</i> L.)	1540800
"		<i>Aster</i> sp.	1540806
"		<i>Solidago shortii</i> Torr. & Gray	1552517
"		<i>Aster heterophyllus</i> Willd. (= <i>A. cordifolius</i> L.)	1540813
"		<i>Aster</i> sp.	1539424
Siedenburg		<i>Aster</i> sp.	1539428

"In Kamtschatka leg. cl. Rieder mecum benevole communicavit amicus cl. beatus Prof. Fischer, Petropolitanus, 1848."
 "In montosis siccis prope Ircutiam, in Siberia baicalensi leg. cl. Turczaninoff, misitque 1848." Original label indicates that the collection was gathered in 1828.
 "misit amicus cl. Asa Gray, 1858." Original, printed label with "Herbarium of the U.S. North Pacific Exploring Expedition . . . C. Wright Coll. Arakamitchetene Island, Behring Straits."
 "In America boreali leg. cl. Beyrich, ded. amicus cl. Dr. Buek 1844, (sine nomine)."
 Not labelled in Steetz's hand but believed to be the specimen referred to in *Bonplandia* 2:169-170 (1854). Acquired from Asa Gray.
 "In America boreali prope Philadelphia leg. misitque amicus cl. Durand in Philadelphia, 1836."
 "In America boreali, (Pennsylvania) leg. misitque amicus cl. Durand, in Philadelphia, 1837."
 "In America boreali, prope St. Louis (Missouri) leg. cl. Dr. Engelmann, emi ab amico Lüders, 1848."
 "1854." Printed "Herb. A. Gray" label with, in Gray's hand, "Pericome caudata A. Gr./New Mexico/Dr. Henry."
 "In America boreali prope St. Louis (Missouri) leg. deditque amicus Lüders, 1844."
 "In America boreali, (Illinois) specimina haec. pulcherima leg. cl. Dr. Mead; misit amicus cl. Dr. Short in Louisville, 1850."
 "In America boreali prope Lexington leg. misitque amicus cl. Dr. Short in Lexington (Kentucky) 1838." Original label indicates that the collection was gathered in 1837.
 "In sterilibus Indianae Americae borealis leg. misitque cl. Dr. Short sub plane dubio Asteris paniculati? nomine, 1841." Original label indicates that the collection was gathered in 1840.
 "In Rocky Islands at the falls of the Ohio, (loco classico) in America boreali leg. misitque amicus cl. Dr. Short ipse, 1843." Original label indicates that the collection was gathered in 1842.
 "In America boreali, ad ripas fluminis Ohio, prope North-Bend leg. misitque amicus cl. Dr. Short, 1844." Fig. 6.
 "In America boreali, (Fernbank ad ripas fluminis Ohio prope North Bend, Kentucky) leg. misit amicus cl. Dr. Short in Louisville 1850."
 "Prope Rochester (New York) in America boreali leg. misitque Siedenburg, ded. amicus cl. Sonder, 1834."

Thurber, G. (1821-1890) & Calder, A.L. Townsend, D. (1787-1858)		"In America boreali, (Rhode Island) legg. cl. Thurber et Calder, misit amicus cl. Dr. Short in Louisville, 1850."	<i>Aster spectabilis</i> Ait.	1540811
		"In America boreali prope West-Chester leg. cl. Townsend misit cl. Dr. Short s. ne. 'Solidago speciosae' cum (quae non est), 1838." Original label with printed "David Townsend, West Chester, Pa."	<i>Solidago arguta</i> Ait.	681770
		"N. 1627 hb. Moritz . . . Hanc nominavit cl. Klotzsch."	<i>Eugenia karsteniana</i> Klotzsch ex Berg var. <i>albicans</i> Berg	*1540544
		Label in unknown hand has "Caracas, E. Otto." Also label with "Dr. Steetz Herb."	<i>Pectis elongata</i> Kunth	1545430
		"In Dalmatia leg. cl. Sieber, emi ab amico Ecklon, 1836."	<i>Helichrysum angustifolium</i> DC.	1539413
		Original label with "Hieracium auricula Froelich. e herb. Froelichii/ d. Sz. Bip." With "Dr. Steetz Herb." label.	<i>Hieracium auricula</i> L.	681773
		Original label, possibly in Schultz-Bip.'s hand, with "26/6 34 d. D. Schultes fil., com. Sz Bip."	<i>Hieracium bathini</i> Bess. (= <i>H. praealtum</i> Vill. ex Gochnat)	681771
Venezuela	Moritz, J.W.K. (1797-1866)			
	Otto, C.F.E. (1812-1885)			
	Sieber, F.W. (1789-1844)			
Yugoslavia	Froelich, F.H.W. (1769-1845)			
Europe — country unknown	Schultes, D. fil.			

Table 3. Examples of *Orchis* L. sensu lato collections in the Steetz Herbarium.

COUNTRY	ORIGINAL SOURCE	STEETZ LABEL	TAXON	MEL NUMBER
Austria	Sonder, O.W. (1812-1881)	"in Alpihus Salisburgensibus lectam ded. amicus Sonder, 1838" & "teste cl. Reichenbach."	<i>O. speciosa</i> Host (= <i>O. mascula</i> L.)	1542450
Czechoslovakia	Sieber, F.W. (1789-1844)	"in Bohemia legit Sieber; emi ab amico Ecklon 1836." & "teste cl. Reichenbach."	<i>O. palustris</i> Jacq.	1542422
France	Buchinger, J.D. (1803-1888)	"in Alsatia prope Mutzig leg. Buchinger, e herbario beati Dr. Comien; 1833."	<i>O. hircinia</i> Crantz	1542420
Germany	Hofman-Bang	"in Gallia lectam misit amicus cl. Hofman-Bang. 1835." & "teste cl. Reichenbach."	<i>O. simia</i> Lam.	1542449
	Benecke, ?F.	"in Saxonia prope Naumburg legit Benecke; e herbar. amici Kohlmeier; emi 1837."	<i>O. pallens</i> L.	1542448
	Buek, J.N. (1779-1856)	"in Silesia prope Francofurtum ad Viadrum legit mistique amicus Buek 1837." & "teste cl. Reichenbach."	<i>O. sambucina</i> L.	1542421
	Comien	"in Franconia lectam recepi e herbario beati Dr. Comien, 1833" & "teste cl. Reichenbach."	<i>O. sambucina</i> L.	1542421
	Greve	"prope Monasterium legit exemplaria haecce Greve; e herbario beati Dr. Comien; 1833." Label, perhaps in Comien's hand, has "E flora Münster, ded. Greve 1829."	<i>O. pyramidalis</i> L.	1542426
	Hornung, E.G. (1795-1862)	"in Thuringia a prope Aschersleben leg. Hornung; e herbario amici Kohlmeier; emi 1837."	<i>O. palustris</i> Jacq.	1542422
	Lucae, ?A.F.T. (1800-1848)	"in Saxonia prope Naumberg leg. Lucae Berollinensis; e herbario amici Kohlmeier, emi 1837."	<i>O. sambucina</i> L.	1542419
	Kohlmeier (?-1860s)	"in Bavaria prope Augsburg lectam recepi e herbario amici Kohlmeier; 1837."	<i>O. coriophora</i> L.	1542423
	Kroeber	"prope Heidelberg leg. deditque amicus Kroeber; 1828."	<i>O. pyramidalis</i> L.	1542426
	Minder	"prope Lübeck leg. deditque amicus beatus Minder, 1824."	<i>O. pyramidalis</i> L.	1542426
	Richter, ?H.E.F. (1808-1876)	"prope Bonn (ad Rhenum) legit deditque amicus Richter; 1828." & "Omnia revera! teste cl. Reichenbach."	<i>O. maculata</i> L.	1542431
	Schönheit, F.C.H. (1789-1870)	"in Thuringa a prope Rudolstadt leg. Schönheit, e herbario amici Kohlmeier; 1837."	<i>O. hircinia</i> Crantz	1542420
	Sonder, O.W. (1812-1881)	"prope Arnstadt, oppidulo haud procul ab Erfurt in Thuringa lectam ded. amicus Sonder 1838."	<i>O. pallens</i> L.	1542429
	Steetz, J. (1804-1862)	"in Saxonia prope Halam ipse legi 1825."	<i>O. palustris</i> Jacq.	1542432
	"	"in Franconia prope Wirceburgum (Gerbrunn) ipse legi 1827." & "revera teste cl. Reichenbach."	<i>O. mascula</i> L.	1542433
	Steven von, ?C. (1781-1863)	"In Tauria leg. cl. de Steven; habeo specimen s.w. Orch. angustifoliae M.B. e herbario cl. Panzer, nunc Academiae Wirceburgensis pertinente, ab amicus cl. Prof. Leiblein, 1840." & "teste cl. Reichenbach, planta rara."	<i>O. iberica</i> Bieb. ex Willd.	1542435
	Uelm	"in Saxonia prope halam leg. deditque amicus Uelm; 1825." Fig. 5.	<i>O. morio</i> L.	1542427

Greece	Sieber, F.W. (1789-1844)	"in insula Creta (sine nomine) leg. Sieber; emi ab amico Ecklon; 1836."	<i>O. pyramidalis</i> L.	1542436
	Spruner, W. von (1805-1874)	"In Graecia (Hymethus) leg. cl. a Spruner, merumque benevole communicavit 1846." & "Revera! teste cl. Reichenbach."	<i>O. brancifortii</i> Biv. (= <i>O. quadripunctata</i> Ten.)	1542437
Italy	Hübener, ? J.W.P. (1807-1847)	"in Italia lectam ded. Dr. Hübener 1835."	<i>O. robertiana</i> Loisel. (= <i>O. longibracteata</i> Biv.)	1542439
	Milde, ? J. Müller, U.I.	"in italia (Cap Casarelle) legit amicus Milde, emi 1835." "in Sardinia leg. Müller; emi a Dr. Hübener, 1835."	<i>O. simia</i> Lam. <i>O. saccata</i> Reichb.f. (= <i>O. sambucina</i> L.)	1542449 1542440
	Sieber, F.W. (1789-1844)	"in Corsica, leg. Sieber; emi ab amico Ecklon; 1836." Printed label has "Pietro-Pugno ben Bastia-Corsica."	<i>O. pyramidalis</i> L.	1542436
	Tommasini, M.G.S. (1794-1879)	"In Istria prope Tergestum leg. cl. Tommasini (in pratis) ded. amicissimus Sonder, 1841," & "... teste Reichenbach."	<i>O. variegata</i> All.	1542454
Macedonia	Frivaldszky von Frivald, E. (1799-1870)	"In Macedonia leg. cl. Frivaldszky, misit amicus Rochel (Perthinensis), s.w. Orch. hircinae Linn., 1841." & "teste Reichenb."	<i>O. hircinia</i> Crantz	1542441
Norway	Boeck, C.P.B. (1789-1877)	"In Norwegia prope Kongsberg leg. deditque amicus cl. Dr. Boeck, 1841" & "Omnia revera! teste cl. Reichenbach."	<i>O. maculata</i> L.	1542430
	Hübener, J.W.P. (1807-1847)	"leg. Dr. Hübener; in Norwegia, ded. amicus Milde 1835."	<i>O. variegata</i> All.	1542454
Portugal	Lang	"In Luisitania prope Olisiporeum leg. amicus Dr. Lang; misitque (sine nomine) 1839," & "teste cl. Reichenbach."	<i>O. simia</i> Lam.	1542443
Romania	Wierzbicki, P. (1794-1847)	"In sylvis prope Mehadia in Banatu leg. cl. Wierzbicki; misit amicissimus cl. Rochel (Perthinensis) 1841."	<i>O. tetragona</i> Hueffel (= <i>O. maculata</i> L.)	1542434
Switzerland	Hornung, E.G. (1795-1862)	"in Helvetia prope Genf leg. Hornung e herbar. amici Kohlmeier; emi 1837," & "teste cl. Reichenbach."	<i>O. militaris</i> L.	1542444
	Milde, ? J. Sickmann, J.R. (1779-1849)	"In Helvetia in monte Simplon legit amicus Milde; emi 1835." "in helvetia lectam emi a Sickmann 1825" & "teste cl. Reichenbach."	<i>O. variegata</i> All. <i>O. sambucina</i> L.	1542454 1542419
	Stein, ? J.C. (1776-1834)	"in Helvetia (in monte Rigi) leg. Stein, e herbario amici Kohlmeier; emi 1837," & "Has cl. Reichenbach non vidit."	<i>O. globosa</i> L.	1542447
	Durand, E.M. (1794-1873)	"In America boreali lectam misit Durand in Philadelphia 1836" & "teste cl. Reichenbach."	<i>O. spectabilis</i> L.	1542452
U.S.A.	Short, C.W. (1794-1863)	"In America boreali leg. misitque amicus cl. Dr. Short, Lexington; 1838,"	<i>Habermaria spectabilis</i> Spreng. (= <i>O. spectabilis</i> L.)	1542451
	Schütze, G. (1794-1863)	"In America boreali prope New-Washington leg. Schütze emi a Pharmacopola Pohlmann, Lubecensi 1837." & "teste cl. Reichenbach."	<i>O. spectabilis</i> L.	1542452

In finalising this paper we have examined perhaps one thousand collections belonging to Steetz's herbarium. They include algal, fern and flowering plant collections, with the latter group being by far the major component of Steetz's herbarium. We have failed to locate collections of fungi, lichens and bryophytes from his herbarium but a card index compiled some years ago does suggest the presence of bryophyte collections.

The reference by Stafleu & Cowan (1985) that Steetz's orchid collection is in W (as part of herb. Reichenbach) is clearly misleading, as evidenced by the 51 collections of *Orchis* L. (many of which are listed in table 3) and the 33 collections of *Ophrys* L. (ten species represented) which have been located in MEL.

All contributors, both direct and indirect, to Steetz's herbarium are indexed at the back of this paper. Direct contributors are listed in one or more of the four tables which outline examples of collections in the Herbarium. Species names in the tables are those used by Steetz, hence the broad concept of the genus *Orchis* L. In some cases we also give what we believe to be the currently accepted name, under which specimens are placed in MEL.

Additional information on contributors is usually not included due to the general availability of works such as Lanjouw & Stafleu (1954, 1957), Barnhardt (1965), Stafleu (1967), Stafleu & Cowan (1976, 1979, 1981, 1983, 1985), Chaudhri, Vegter & Da Wal (1972) and Vegter (1976, 1983, 1986). Stafleu & Cowan (1981), for example, refer to the series of papers by J. H. Maiden which detail many Australian botanists. However, additional information is provided when a collector is not well known or where new information is available as a result of our work. Similarly notes on several works to which Steetz contributed, i.e. Lehmann's *Pl. Preiss.*, Peters' *Naturw. Reise Mossambique* and Seemann's *Bot. voy. Herald*, are also included. All notes are arranged alphabetically by collector or author.

The size and condition of specimens in all herbaria is determined by many variables, including a botanist's desire to obtain representative specimens of species previously not in his keeping. This may be nothing more than a collector's whim to possess a collection of many species but was not the case for Steetz. In a letter to N. J. Andersson, dated 30 July 1854, he said of his request of specimens that "I do not look on my herbarium as a mere hobby, rather it is for me a tool in my scientific work. For this reason I do not need splendid specimens, but only some instructive and characteristic branches with complete capitula and a few leaves, which are adequate for my purposes as they provide sufficient information for my determinations" (translated from German). This statement supplies us with a reason why some species in Steetz's herbarium are represented by fragmentary specimens. A further comment in the same letter to Andersson also sheds light on this question. He states that "You will find that I returned all your specimens to you, even those represented by several specimens. I have even enclosed the analytical dissections of the capitula; only of the new genus . . . I have retained the analytical dissections of one capitulum which I used for my description. I always do it this way, because the trust of my friends and correspondents means more to me than the enrichment of my herbarium" (translated from German).

This method of operation probably explains why the few type collections in MEL of species described by Steetz in Peters' *Naturw. Reise Mossambique* primarily consist of dissected capitula (Fig. 7). Fragments of type specimens of species described by other botanists also exist in Steetz's herbarium, e.g. species of *Comesperma* Labill. Such collections have always been meticulously labelled by Steetz.

Although some fragmentary collections exist the majority are of good material and are frequently well labelled.

We have placed printed labels with the words "Herbarium J. Steetz (1804-1862)" with all collections examined and considered to belong to Steetz's herbarium. Many of the collections remain unmounted.

B. FLOWERING PLANTS (tables 1 to 3)

On arrival at MEL Steetz's herbarium contained both mounted and unmounted collections and at least some were contained in distinctive blue, generic folders with

the name written clearly on the outside (Fig. 3a). The majority of collections remain in much the same condition as when they arrived, except in cases where notes by MEL herbarium staff (especially by the botanical assistant J. R. Tovey) indicating that the collections are from Steetz's herbarium, have been added during their incorporation into the general collection. Thus notes, almost invariably on blue paper, such as "East India. Dr. Steetz Herb." and "Dr. Steetz Herb." (Fig. 3) can be found accompanying many collections. However the majority of collections lack such labels and positive identification can sometimes be difficult. On the other hand Steetz's handwriting (Figs 1, 2, etc.), the information he provided on labels and the format he used for mounted collections frequently allow for quick identification. Typical examples of mounted sheets from Steetz's herbarium, which may contain one or more separate collections, are shown in Figs 4,5,6. Specimens are invariably mounted with paper strips and the name of the taxon, in comparatively large letters, is written near the base of the sheet. Locality details and notes on the

and richest of the world. But I think,
if even only one specimen should be
worthy of being accepted into your Herba-
rium, it would lie there on the right
place.

Therefore, my dear Sir, I beg you
to excuse my boldness and to let me
hope, that you will kindly accept
this little parcel.

I have the honour, with the
highest esteem to be

my dear Sir

Yours very truly
Joachim Steetz Dr

Fig. 1. Part of letter from Steetz to Bentham, dated 21 August 1856. (K, North Europe letters, NAE.-YOU. 1845-1900). Actual size.

acquisition of a collection are in Latin and are found immediately below the specimen(s). (Original, but loose, collector's labels also frequently accompany specimens.) Synonyms, often with a full literature citation, are often noted on the lower corners of sheets and additional notes referring to species affinities, etc. may also be recorded.



Fig. 3. Upper — Label from a generic folder from Herb. Steetz used for flowering plants. In Steetz's hand. Lower — Labels accompanying a specimen of *Blumea* DC. (MEL 611821); upper label in Steetz's hand, lower label in hand of botanical assistant at MEL.



Fig. 4. Lectotype sheet of *Pogonolepis stricta* Steetz, from Herb. Steetz (includes additional labels added since acquisition by MEL).

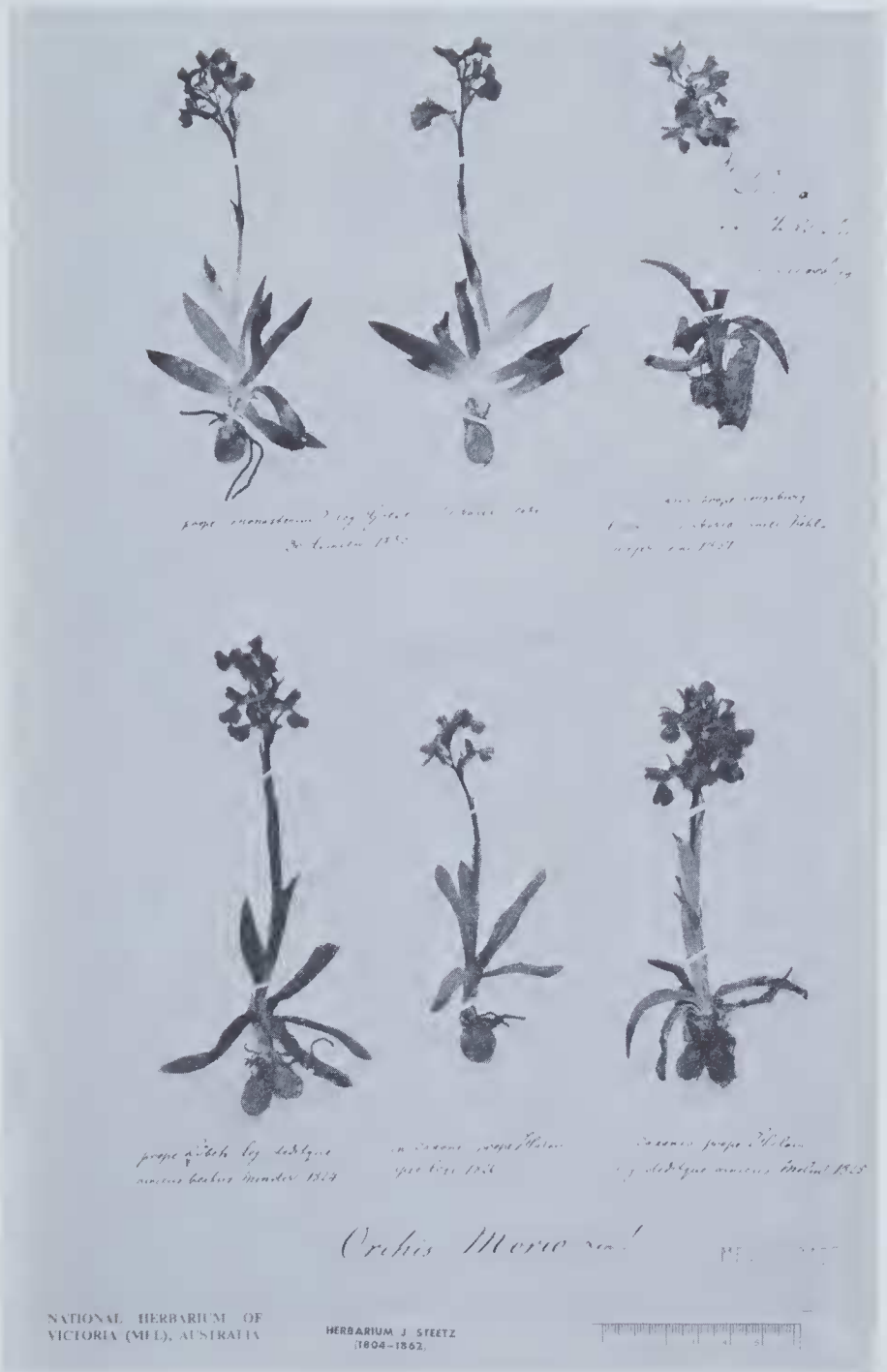


Fig. 5. Sheet with specimens of *Orchis morio* L., from Herb. Steetz (includes additional labels added since acquisition by MEL).



Fig. 6. Upper — Collection of *Aster heterophyllus* Willd. obtained by Steetz from C. W. Short in 1844. Middle — Label, in C. W. Short's hand, with the date "1844", the date of receipt, recorded in Steetz's hand. Lower — Label accompanying collection of *Anemone falconeri* Thoms. (MEL 1540821). The date "1856" believed to be in Steetz's hand.

The majority of Steetz's herbarium consists of unmounted specimens and their identification is usually reliant on the identification of handwriting although the information noted on the label is also a useful guide. Thus the label accompanying the specimens of *Utricularia intermedia* Hayne (MEL 90303) gives reference to the place of publication, etc., in the same manner which was noted for Steetz's mounted specimens. (In this example the label appears to be part of a species folder which contained more than one collection. The folder was apparently cut into pieces during the mounting of the specimen for loan in 1979.)

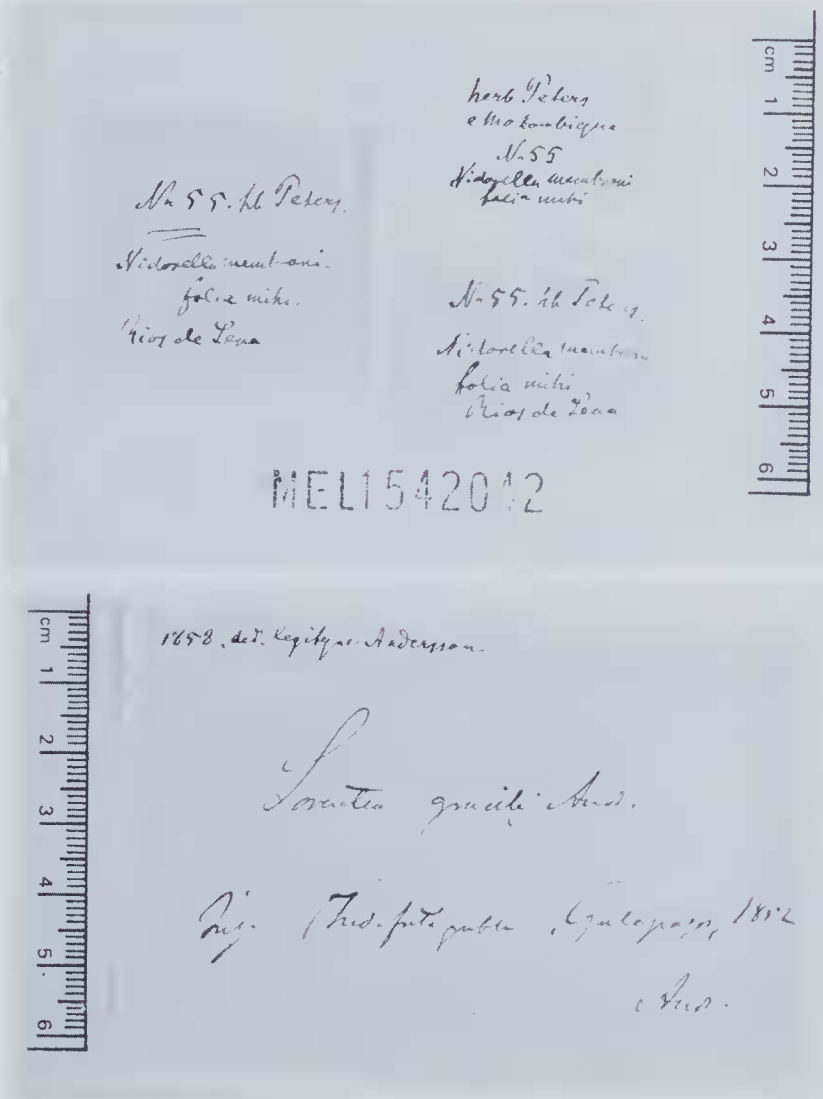


Fig. 7. Upper — Envelopes, annotated by Steetz, containing fragments of *Nidorella membranifolia* Steetz (MEL 1542042). Lower — Label, primarily in the hand of N. J. Andersson, with annotation by Steetz in the upper left hand corner, accompanying specimens of *Lorentea gracilis* Hook. f. [= *Pectis subsquarrosa* (Hook. f.) Schultz-Bip.] (MEL 1543494).

Steetz often acquired fragments of type collections of species. Such fragments, in some cases the only material of a particular taxon in his herbarium, are to be found in small envelopes with annotations in Steetz's hand on the outside of the packets, e.g. *Nidorella membranifolia* Steetz (Fig. 7).

In many cases the referral of a specimen to Steetz's herbarium can be difficult due to a paucity of Steetz's writing on the label. For example, a specimen from Chile of *Senecio bahioides* Hook. & Arn. has only "Philippi 1858" in Steetz's hand on a label which has, in an unknown hand, the locality details for the specimen. Similar situations abound throughout the herbarium and clearly much care must be taken when deciding whether to attribute such specimens to Steetz's herbarium. It is more difficult to decide whether collections with only a pencilled date (year only) in the corner of a label which is otherwise clearly not in Steetz's hand can be attributed to his herbarium. However there is good evidence to suggest that many MEL collections labelled in this fashion are part of Steetz's herbarium. There are collections, e.g. of *Hieracium sudeticum* Tausch (MEL 681775, table 2), in which labels with only the date apparently in Steetz's hand are also accompanied by "Dr. Steetz Herb." labels (referred to above) added during the incorporation of the collections in MEL. Further evidence, which indicates that the pencilled dates reflect when Steetz acquired collections, comes from examining data obtained on the acquisition of collections from C. W. Short and E. M. Durand (see notes on Fern Herbarium).

There are collections made by Andrew Sinclair from New Zealand which lack notes in Steetz's hand but can be attributed with some confidence to his herbarium. A letter in the K archives indicates that Steetz received Sinclair collections via William Gourlie of Glasgow (see below under notes on Sinclair). In MEL we have found specimens accompanied by printed labels indicating that they are Sinclair collections from Gourlie. One collection, of *Brachyglottis repanda* Forst., is also accompanied by a handwritten label with the words "Dr. Steetz, Hamburg, with W. Gourlie's kind regards" (table 2, Fig. 8). However, all collections at MEL with the printed Sinclair/Gourlie label cannot be automatically regarded as being part of the Steetz herbarium. The possibility that some collections may have been obtained via other channels cannot be discounted, particularly in view of the fact that Mueller acquired collections from many sources during his term as Government Botanist.

C. FERNS (table 4)

Steetz's Fern collection apparently arrived at MEL in an unmounted state. Many specimens can be referred readily to his herbarium because of the handwritten labels. As with the flowering plant collection we also have New Zealand collections with printed Sinclair/Gourlie labels, e.g. collections of *Hymenophyllum* Smith and *Asplenium* L., which probably come from Steetz's herbarium. Similarly, there are collections with only a pencilled date (Fig. 6), or date and collector's name, which may be in Steetz's hand but on labels which are otherwise clearly not written by him. Evidence that they are part of Steetz's herbarium comes from an examination of C. W. Short's and E. M. Durand's collections from the United States of America. It is clear from original mounted collections of flowering plants with data pertaining to their acquisition in Steetz's hand, that Short sent material to him on no fewer than six separate occasions, i.e. in 1837, 1838, 1841, 1843, 1844 & 1850 (see table 2). We have in the Fern herbarium collections gathered by Short, e.g. of *Pellaea atropurpurea* (L.) Link (Fig. 6b, table 4) with either printed labels or labels in Short's hand, plus a pencilled date (year only) in the corner of the labels. The dates invariably match those noted by Steetz for the receipt of flowering specimens acquired from Short. A similar situation exists for some collections made by Durand who forwarded specimens of flowering plants to Steetz in 1836 and 1837 (see table 2). For example there is a collection of *Pellaea atropurpurea* (table 4) at MEL with "Durand 1837" pencilled in the corner of a label which is otherwise not in Steetz's hand. Because of these examples we have tentatively referred other collections

Table 4. Examples of fern collections in the Steetz Herbarium.

COUNTRY	ORIGINAL SOURCE	STEEZ LABEL	TAXON	MEL NUMBER
Canary Islands	Bolle, C.A. (1821-1909)	Label, in Bolle's hand, with "Gymnogramme leptophylla Desv./ Teneriffa. 1852/ Carl Bolle". Pencilled date "1854", suggests Steetz herbarium, see text.	<i>Anogramma leptophylla</i> (L.) Link	1540793
Germany	Unknown	"flor. Hamburg, 1824/ flor. Halens. ded. Schlüter 1826." [Suggests mixed colln.] Fig. 8.	<i>Athyrium filix-femina</i> (L.) Roth.	1540787
New Zealand	Sinclair, A. (c. 1796-1861)	Printed label with "Northern Island, New Zealand. Andrew Sinclair, Esq., M.D./ From William Gourlie, Glasgow." See text.	<i>Hymenophyllum demissum</i> (Forster) Swartz	106408
Portugal	Lang	"Trichomanes canariensis L., Brot. Lus. T. 2 pag. 395, Lissabon. Dr. Lang. 1839."	<i>Anogramma leptophylla</i> (L.) Link	1540788
U.S.A.	Durand, E.M. (1794-1873)	Label in unknown hand has "Pteris atropurpurea L. Nova Caesarea" plus, probably in Steetz's hand, "Durand 1837". See text.	<i>Pellaea atropurpurea</i> (L.) Link	1540792
	Schütze, G.	"emi a Pohlmann, pharmacopola Lubecensis 1837." On the same label but in an unknown hand "Pteris atropurpurea L. Felsenklippen des Missouri Ufers New-Washington. Schütze."	<i>Pellaea atropurpurea</i> (L.) Link	1540789
	Short, C.W. (1794-1863)	Stamped label with "C.W. Short, M.D. Lexington, Kentucky. 1837." Same label with pencilled date "1838", probably in Steetz's hand. See text.	<i>Pellaea atropurpurea</i> (L.) Link	1540791
	"	Label in Short's hand "Pteris atropurpurea, Kentucky, C.W. Short". Same label with pencilled date "1844". See text. Fig. 6.	<i>Pellaea atropurpurea</i> (L.) Link	1540794
Venezuela	Moritz, J.W.K. (1797-1866)	"No. 266. Sphaerocionium hirsutum Presl., Hymenophyllum -- Lin. Tovar Thorecy, 1849." [Also with original Moritz label.]	<i>Hymenophyllum hirsutum</i> (L.) Swartz	657862
Cultivated	Unknown	"(41) Pteris atropurpurea/ Spreng syst. veg. T.4 pag. 72./hort. bot. Bonnens. ded. Richter 1828."	<i>Pellaea atropurpurea</i> (L.) Link	1540790

Table 5. Examples of algal collections in the Steetz Herbarium.

COUNTRY	ORIGINAL SOURCE	STEEZ LABEL	TAXON	MEL NUMBER
EUROPE Adriatic Sea	Hübener, J.W.P. (1807-1847)	"e mari adriatico ded. Dr. Hübener 1835"	<i>Sphacelaria scoparia</i> [= <i>Stypocaulon scoparium</i> (L.) Kuetz.]	500966
Baltic Sea	Lenormand, S.R. (ex hb.) (1796-1871)	labelled by Lenormand "Mer Adriatique", annotated on back of sheet "Dr. Stz.H."	<i>Sphacelaria cirrosa</i> (Roth) C.Ag.	501148
	Suhr, J.N. von (1792-1847)	"e mari baltico, misit cl. Suhr ad amicum Senat. Binder, qui mecum communicavit 1834"; labelled by Suhr "mare baltico"	<i>Sphacelaria cirrosa</i> (Roth) C.Ag.	501063
Denmark	Hofman-Bang, N. (1776-1855)	"ad litus Hofmansgave (Fioniae) misit amicus cl. Hofman-Bang 1835"; labelled by Hofman-Bang "Sphacelaria pennata Lyngb., ad litus Hofmansgave"	<i>Sphacelaria plumula</i> var. <i>gracilis</i> [= <i>Sphacelaria cirrosa</i> (Roth) C.Ag.]	500836
England	Binder, N. (ex hb.) (1785-1865)	"ad oras anglicas (prope Dover), ded. amicus Senat. Binder 1834"	<i>Sphacelaria cirrosa</i> (Roth) C.Ag.	501078
France	Crouan frat. (P.L. & H.M.) (1798-1871) & (1802-1871)	labelled by one of the Crouan brothers "Mesogloia virescens Berk.! rade d.Brest", annotated by Lenormand "Mr Crouan", and on the back of the sheet "Dr. Stz.H."	<i>Mesogloia virescens</i> [= <i>Eudesme virescens</i> (Carm. ex Harv.) J.Ag.]	665834
	Lenormand, S.R. (1796-1871)	labelled by Lenormand "Cherbourg", annotated on back of sheet "Dr. Stz.H."	<i>Mesogloia vermicularis</i> [= <i>Mesogloia vermiculata</i> (Sm.) S.F. Gray]	665847
Germany	Binder, N. (1785-1865)	"circa Helgoland leg. deditque amicus Senat. Binder 1834"	<i>Sporochinus aculeatus</i> [= <i>Desmaresia viridis</i> (O.F. Müll.) Lamour.]	677280
	Gaedechens	"ad insulam Helgoland leg. deditque amicus Dr. Gaedechens 1836"	<i>Cladostephus spongiosus</i> (Huds.) C.Ag.	500860
	Steetz, J. (1804-1862)	"Mesogloia virescens auct. Anglos, teste Dr. Liebmann, ad insulam Helgoland legi 1834"	<i>Mesogloia virescens</i> [= <i>Eudesme virescens</i> (Carm. ex Harv.) J.Ag.]	665831
Italy	Römer, F.A. (1809-1871)	"ad Tergestum in mari adriatico ded. Assessor Römer e Hildesheim 1834"	<i>Sphacelaria scoparia</i> [= <i>Stypocaulon scoparium</i> (L.) Kuetz.]	500965
Sweden	Suhr, J.N. von (1792-1847)	"ded. Suhr Slesvicens. 1841", labelled by Suhr "Herb.S., Skaflo, mare Bahusia 1840"	<i>Mesogloia vermicularis</i> [= <i>Mesogloia vermiculata</i> (Sm.) S.F. Gray]	665848
NON-EUROPE Canary Is.	Suhr, J.N. von (ex hb.) (1792-1847)	"ad insulas fortunatas, ded. amic. cl. Suhr Slesvicens. 1835"; labelled by Suhr "ex Ins. fortunatis"	<i>Chondria acanthophora</i> [= <i>Acanthophora spicifera</i> (Vahl) Boergesen]	677275

Cuba	Binder, N. (ex hb.) (1785-1865)	“ad insulam Havannah, ded. amicus Sen. Binder 1834”	<i>Sphaerococcus musciformis</i> [= <i>Hypnea musciformis</i> (Wulf.) Lamour.]	677277
West Indies	Binder, N. (ex hb.) (1785-1865)	“ad insulam St. Croix, ded. Sen. Binder 1834”, labelled in an unknown hand “Westindien”, and by Binder “St. Croix”	<i>Chondria acanthophora</i> [= <i>Acanthophora spicifera</i> (Vahl) Boergesen]	677274
	Thorey, D.	“e India occident. ded. amicus Dr. Fallati 1834”; with “D. Thorey, Westindien” in an unknown hand.	<i>Sphaerococcus musciformis</i> [= <i>Hypnea musciformis</i> (Wulf.) Lamour.]	677278
	Frölich, F.H.W. (ex hb.) (1769-1845)	“ad Indiam occidentalem, ded. amicus Dr. Buek 1836”; labelled in an unknown hand “Ind.occidental. (Fröhlich)”	<i>Chondria acanthophora</i> [= <i>Acanthophora spicifera</i> (Vahl) Boergesen]	677276
	Ravn, P (1783-1839)	“ad insulam St. Thomas leg. Ravn, ded. Dr. Schön 1847”	<i>Acanthophora spicifera</i> (Vahl) Boergesen	674889
Chile	Lenormand, S.R. (ex hb.) (1796-1871)	labelled by Lenormand “Detroit d. Magellan”, annotated on the back of the sheet “Dr. Stz.H.”	<i>Sphaclaria funicularis</i> [= <i>Cladostephus spongiosus</i> (Huds.) C.Ag.]	500961

exhibiting only pencilled dates of acquisition to Steetz's herbarium, e.g. Bolle's collection of *Anogramma leptophylla* (L.) Link (table 4). However we have generally refrained from this practice.

D. ALGAE (table 5)

Although not nearly as extensive as his herbarium of higher plants, Steetz nonetheless owned a considerable algal herbarium. In his original herbarium, specimen sheets were kept in species folders (33.5 x 21 cm) which were annotated on the lower, right-hand side with binomial and author citation, synonyms, often literary references and locality and source of the collection with the year of acquisition. The folder contained one to several specimen sheets, usually with their own brief annotations or labels in the hand of a previous owner of the specimen. Few of these folders, with their contents intact, still exist. Most were cut up on incorporation into the MEL collections, with only the annotated portion being retained as a label. As a result many collections, previously in one folder, were separated and information sometimes lost.

The algal herbarium contains many specimens collected by Steetz himself, mostly from Helgoland. There are also a considerable number of specimen sheets from Lenormand which are not labelled by Steetz but are marked "Dr. Stz. Hb.", presumably by a former MEL staff member assisting with the incorporation of specimens.

NOTES ON CONTRIBUTORS AND PUBLICATIONS

ANDERSSON, NILS JOHAN (1821-1880).

Andersson spent ten days (11-20 July 1852) collecting in the Galápagos Islands, returning to Sweden with 325 numbers (Wiggins & Porter 1971). Andersson (1854) subsequently published an account of the vegetation of the Galápagos Islands (see Stafleu & Cowan 1976). At MEL we have collections gathered from this expedition. About 25 species, from the Compositae, Euphorbiaceae, Leguminosae, Losaceae, Malvaceae, Rubiaceae and Verbenaceae have been located. Some give no indication as to how they were acquired but others came as part of either O. W. Sonder's or Steetz's herbarium.

At least nine species of Compositae collected by Andersson from the Galápagos Islands and now in MEL can be attributed to Steetz's herbarium. It is evident from Steetz's letters to Andersson (see Appendix 1) and the date of receipt recorded by Steetz on herbarium labels (table 2, Fig. 7) that he acquired specimens on at least three separate occasions. Thus in July 1854 he wrote to Andersson saying he was returning his plants to him. Apparently Andersson had sent Steetz his collection of Compositae from the Galápagos Islands for determination. Specimens of *Trigonopterum ponteni* Andersson ex Steetz were included in this collection and used by Steetz to compile his description. Steetz noted in this letter that, with the exception of a single dissected capitulum of *T. ponteni*, he was returning all material to Andersson. However in the same letter he requested that Andersson reserve for him as complete a set as possible of Compositae. Specimens were duly forwarded and their receipt acknowledged by Steetz in a letter dated 24 February 1856. Their date of receipt, i.e. 1856, is also recorded by Steetz on herbarium labels. In the same letter Steetz also accepted Andersson's offer of further plants from the Galápagos Islands and we know from herbarium labels that he received specimens in 1858. In a letter dated 28 June 1859 Steetz commented on several species of Compositae and thanked Andersson for his valuable specimens from the Galápagos Islands. Steetz was very apologetic about his delay, clearly of some months, in replying to Andersson and it seems likely that he was acknowledging receipt of the specimens received the previous year.

Although not located at MEL it is evident from Steetz's letter dated 30 July 1854 that Andersson planned to send him some Swedish plants in exchange for some collections of Compositae held by Steetz.

BINDER, NIKOLAUS (1785-1865).

The major part of Steetz's algal herbarium consists of specimens obtained from Binder. Binder, the son of an advocate, was born in Lübeck on 11 May 1785. He followed a legal career, studying in Tübingen, Göttingen and Heidelberg. In 1811, after the dissolution of the Lübeck Senate under the French rule, he went to live in Hamburg where he was registered as Advocate at the Imperial Court. He remained in the city after the restoration of Hamburg's independence and obtained citizenship in 1815. He continued to practise as an advocate until his election to the Hamburg Senate in 1823. In 1855 he was elected Lord Mayor of Hamburg. He retired in 1861 and died on 23 November 1865 (in litt., Dr 1. Friederichsen, HBG, 1978).

Binder had a keen interest in botany, especially phycology. Relatives, friends and many ships' captains collected algal specimens for him (in litt., Dr 1. Friederichsen, 1978) and he also purchased J.G.C. Lehmann's algal herbarium. Many new species were described by various phycologists from specimens obtained from Binder. The botanists J. Agardh, W.H. Harvey, F.T. Kützing, C.J.F. Schmitz and O.W. Sonder named genera and species of algae after him.

Binder's herbarium was presented to the Botanical Institute in Hamburg (HBG) after his death (Fischer-Benzon 1890).

HOOKEE, JOSEPH DALTON (1817-1911) and THOMSON, THOMAS (1817-1878).

Mueller (1862, 1863d), in annual reports to the Government of Victoria, noted that MEL acquired collections made by Hooker and Thomson in India. A letter (19 March 1856, K) from Steetz to Hooker, sent from Hamburg, also reveals that Steetz received collections from India:

"Some days ago I had the pleasure of receiving a great parcel with Indian plants under my address through Mr. Pamplin in London. No letter accompanied this very valuable collection, but in the inside of the parcel a few lines informed me, that I am indebted for it to yours and Dr. Thomson's munificence.

Therefore, my dear Sir, I hasten to return to you and Dr. Thomson my best thanks for this most interesting present, containing many species even genera of plants, which I never saw before, and whose scientific worth I fully know to estimate, being the original materials to the most important work, the excellent *Flora Indica* of your pen, just now coming out." [(C) RBG Kew]

Examination of the MEL collections of non-Australian species of *Blumea* DC. confirms the presence of Hooker and Thomson collections from India. Thus eight sheets contain printed labels with the words 'Herb. Ind. Or. Hook. fil. & Thomson' and others have handwritten labels (unknown hand) which record Thomson as the collector. No information as to their source, i.e. K, Steetz, or perhaps O.W. Sonder, is recorded. However there are some Indian collections of *Blumea* which are clearly from Steetz's herbarium (c. 21 sheets) but they give no indication as to the collector(s). They all bear a label "East India. Dr. Steetz Herb." in an unknown hand plus notes which are in Steetz's hand (Fig. 3). It seems likely that the specimens are those received from Hooker. Information from a collection of *Anemone falconeri* Thomson which has a printed label and a pencilled date "1856" (Fig. 6, table 2) also suggests that some of the Hooker and Thomson collections of *Blumea* with printed labels may have come to MEL as part of the Steetz herbarium.

MORITZ, JOHANN WILHELM KARL (1797-1866).

A letter from Steetz to George Bentham, sent from Hamburg on 21 August 1856 (K), reads in part:

"A few weeks ago, I addressed a little parcel of Ferns, collected by Moritz in Venezuela, to Mr. William Gourelie in Glasgow, not aware of the most lamented death of this zealous, able and honourable young Botanist.

His brother, Mr. James Gourelie giving me this painful notice, offered me at the same time, to direct it to Dr. Joseph Hooker, to whom I am indebted for a large and splendid collection of Indian plants.

Now I am told by my friend, Dr. Berthold Seemann, that Dr. Hooker's Herbarium is combined with yours, and so I should be very glad, if you would favour me in considering this little parcel, which probably already arrived in Kew, as directed to yourself.

The tickets bear the name and number under which the specimens are distributed by Moritz and determined by Dr. Klotzsch of Berlin in the Linnaea but I had no time to re-examine them, and fear, that most of the high numbers after 387, named by Moritz as new species, may be old known species, because Mr. Moritz in his farm in Venezuela probably is in want of most of the necessary literary materials."[(C) RBG Kew]

As well as dispensing Moritz's fern collections to K, Steetz retained some collections in his own herbarium. Our survey of the non-Australian fern collection at MEL has revealed Moritz collections of *Ceropteris* Link, *Diplazium* Swartz, *Gymnogramma* Desvaux, *Hemionitis* L., *Hymenophyllum* Smith (see table 3) and *Pellaea* Link. As indicated in table 2, Steetz also obtained Moritz collections of flowering plants.

PETERS, WILHELM CARL HARTWIG (1815-1883).

Steetz contributed the treatment on Compositae for Peters's *Naturw. Reise Mossambique*, the complete work on the family being published in volume six, part two in March or April 1864 (Stafleu & Cowan 1983), approximately two years after Steetz's death.

In a letter (6 September 1853) to Asa Gray Steetz said that he had received, via the auspices of Dr Klotzsch, Peters's Compositae from Mozambique. Following letters to Gray provide some insight into Steetz's progress on the Compositae and the problems he encountered. Thus at one stage (8 July 1854) he forwarded fragments of an unknown composite from Mozambique for comment by Gray noting that "the flowerhead however is corroded by insects like all specimens having before me". In 1857 (20 April, 28 July) he wrote a particularly long discourse on taxonomic concepts in the Compositae, particularly the Vernoniaceae, as a result of his work with the Mozambique plants. He also noted (28 July) that he was "on the point of finishing my Vernoniaceae of Mozambique" but in another letter (11 November 1858) he said of his conspectus of the Vernoniaceae that "my manuscript is now under the press, but not finished, because my leisure time, remaining from medical practice is but a very short one" and "when the whole manuscript, containing detailed characters of the genera and species, will have left the press I shall haste to send it to you". He did however forward a brief, presumably hand written conspectus of the genera of the Vernoniaceae to Gray for comment and in a further letter (31 March 1859) he commented further on the conspectus, Gray having furnished a reply. In this letter he also stated that "No more than six sheets of my paper are printed now, and two others will finish the Vernoniaceae. I have asked our mutual friend Dr. Klotzsch at Berlin, under whose redaction the whole work appears, for one copy of my treating of Compositae, to send it to you as far as ready and that he send to you every sheet as soon as it appears". Finally in 1861 (19 October) Steetz informed Gray that his treatment of the Compositae was still incomplete but "the twenty first sheet just now is gone under the press".

In a letter to N. J. Andersson (28 June 1859) Steetz also noted the slow progress on the Compositae of Mozambique and said eight sheets had been printed.

The distribution of preprints by botanists was a common practice last century and the above extracts from letters to Andersson and Gray suggest that at least part of volume six, part two of Peters's *Naturw. Reise Mossambique* may have been issued as preprints. Stafleu & Cowan (1983) noted that sheets of volume six, part one were issued well before publication of the complete work, a fact which shows that the issue of preprints was an established practice for this work.

Stafleu & Cowan (l.c.) noted that Peters's herbarium at B is only partly extant, with some duplicates at A, BR, CGE, EA, K & LE. It is evident from publications by Wild (1967, 1969, 1975, 1978, 1980) Jeffrey (1968), Pope (1975) and Wild &

Pope (1977a,b) that type collections of species described by Steetz in Peters's *Naturw. Reise Mossambique* are not to be found in B, apparently having been destroyed. In at least one case this has led to the selection of a neotype, i.e. for *Nidorella microcephala* Steetz by Wild (1969). Few species examined by Steetz for this work are represented in his herbarium and those that are tend to be somewhat fragmentary (mainly dissected capitula). Type specimens of *Nidorella membranifolia* Steetz (Fig. 7) and *N. microcephala* have been located.

PREISS, JOHANN LUDWIG (1811-1883).

Preiss, a German naturalist, arrived in the Swan River settlement of Western Australia in December 1838 (Calaby 1967) and by the time of his departure in January 1842 he had amassed a substantial collection of plants and animals. Approximately 2,700 plant collections subsequently formed the basis of *Pl. Preiss.* (Lehmann 1844-48) which is primarily an enumeration of the plants collected by Preiss in the Swan River Colony. The work also includes descriptions of taxa described from specimens gathered by other collectors, e.g. James Drummond in Western Australia and John Lhotsky, Thomas Mitchell and G. Theodor Siemssen in Eastern Australia.

In his preface to *Pl. Preiss.* the editor, J. G. C. Lehmann (1844), made it clear that Preiss's collections were handed to him and sorted into families before being made available to the 19 co-authors, one of whom was Steetz, for the compilation of descriptions. A list of Preiss's specimens numbered in this fashion is included in *Pl. Preiss.* 2:371-429 (1848). There are also in existence specimens, for example collections of *Grevillea* from TCD which, although bearing labels in Preiss's hand, have different collection numbers than the comparable, presumed duplicate, specimens cited in *Pl. Preiss.* (McGillivray 1975). Such specimens were distributed prior to Preiss handing the bulk of his collection to Lehmann.

The National Herbarium of Victoria contains a considerable number of Preiss specimens. They were obtained through several channels. Mueller (1854), writing to Bentham, noted that he had received 400 Preiss numbers from O. W. Sonder, and further collections arrived when Sonder's private herbarium was acquired in 1883. A large number of specimens were received as part of the Steetz herbarium.

Just how the Preiss collections were handled subsequent to the systematic sorting by Lehmann is generally unclear (Crisp 1983, Wilson 1983). It is known that a number of duplicate, but variably complete, sets of Preiss specimens were compiled (see point 4 below) but how much of the duplicate material was seen by the various authors remains a mystery. We make the following observations on the Preiss collections and Steetz's herbarium:

1. Preiss's Australian collections in Steetz's herbarium are almost invariably numbered according to the sequence in *Pl. Preiss.* The only exception known to us is a collection of *Chthonocephalus pseudevax* Steetz, which due to a duplication of numbers is labelled as *Preiss 2414* but as *Preiss 2414b* in *Pl. Preiss.*

2. Steetz's herbarium contains mounted sheets of most of the Preiss collections he examined when compiling his accounts of the Compositae, Sterculiaceae (Buettneriaceae), Polygalaceae, Tremandraceae and *Fleischeria* Steud. (= *Sida* L., Malvaceae). For example, in his treatment of *Tetratheca* Sm. (Tremandraceae) Steetz cited 16 Preiss collections and all are represented in his herbarium. Only rarely are Preiss numbers for the above families missing from his herbarium. When absent it only appears to be in cases where a taxon is represented by more than one Preiss collection or where Steetz has reworked treatments originally published in *Pl. Preiss.* by Steudel, e.g. Polygalaceae and Sterculiaceae. Thus five of the 21 collections of *Comesperma* Labill. (Polygalaceae) have not been located in Steetz's herbarium. Steetz apparently still saw material, as indicated by his use of exclamation marks after collections cited in the text.

3. Steetz's herbarium contains numerous Preiss collections, including many types, from families which he did not treat in *Pl. Preiss.*, e.g. Caesalpiniaceae, Droseraceae, Myrtaceae, Papilionaceae and Sapindaceae (see table 1). For example 14 out of 21

Preiss collections of the Droseraceae and nine out of 23 Preiss collections of *Calothamnus* Labill. (Myrtaceae), cited by Lehmann (1845) and Schauer (1844) in their respective treatments in *Pl. Preiss.*, are to be found in the Steetz herbarium. 4. In a letter dated the 4 October 1843 Preiss wrote the following to Sir William Hooker (McGillivray 1975, p.15):

“I very much regret not having been able to collect of all species an equal number of specimens, and those persons, who want plants, appear to be dissatisfied not to get a *whole* collection of my plants. I have almost sold my plants, and I think, that those, which still remain, will also be parted with very soon. They consist of 17 Herbaria, containing: 996. 956. 920. 888. 867. 884. 836. 798. 767. 732. 728. 705. 685. 669. 645. 618. 595 species.

The numbers accompanying the plants I beg you to retain, as they exactly will agree with those of the enumeratio, which will soon be published.” [(C) RBG Kew]

5. All of Preiss's Australian collections in the Steetz herbarium were obtained by Steetz in 1843. This is indicated by Steetz on the individual sheets (see table 1, Fig. 4, “emi 1843”).

6. Duplicates of Preiss's collections are found in many herbaria. Although limited, observations by one of us (PSS) of type collections of Compositae described by Steetz have shown that the material of them in his own herbarium is as good as, or often better than, that in others such as LD, P or S. For example, *Preiss 39*, the type collection of the name *Pogonolepis stricta* Steetz, is represented in Steetz's herbarium by a sheet containing three large plants (Fig. 4). Duplicate collections seen in other herbaria consist of fewer or smaller plants, i.e. LD, a single plant; S, two plants; P, three plants but smaller; P (ex Herb. Schultz-Bip.), two plants.

In general all Preiss collections in the Steetz herbarium are of generous proportion and would, we suspect, compare favourably with duplicate specimens elsewhere. Crisp (1983) has independently noted that the types of the Compositae and also the Tremandraceae in Steetz's herbarium are generally better than those in LD.

7. Not all duplicates of Preiss specimens cited in *Pl. Preiss.* are annotated in Steetz's hand. For example the only syntypes of *P. stricta* annotated by Steetz are those in LD and S and of course in his own herbarium.

It is generally conceded that the standard reference set of specimens used for *Pl. Preiss.* is to be found in LD, with J. Agardh having purchased that part of Lehmann's herbarium after the latter's death in 1860 (Nordenstam 1980). The LD collection is also said to be the only set of Preiss collections to have been seen by all authors of *Pl. Preiss.*, a fact emphasised by O. W. Sonder in correspondence with N. J. Andersson of Stockholm (Crisp 1983). Although a number of authors of *Pl. Preiss.* have type material in their own herbaria it is therefore clear that when names in *Pl. Preiss.* are lectotypified the specimens at LD must be given serious consideration. Crisp (l.c.) has suggested that, all things being equal, the LD specimens should be chosen as the lectotype. In the case of names coined by Steetz it is apparent that specimens in his own herbarium should generally be chosen as lectotypes. Not only did Steetz obtain a set of Preiss's specimens in 1843, perhaps one of those alluded to in the letter cited above but in any event well before publication, his set apparently contains better specimens. Furthermore, having at his disposal such a good set it may be that it was primarily these collections upon which he based his descriptions, merely checking and annotating duplicate specimens. Lectotype specimens of a number of names have already been chosen from his herbarium (Short 1983, 1986, e.g. *Pogonolepis stricta*).

SCHOMBURGK, MORITZ RICHARD (1811-1891).

Staffeu & Cowan (1985) stated that Steetz contributed to Schomburgk's *Vers. Fauna Fl. Brit.-Guiana*. We have not seen this work but Mr C. R. Dunlop (in litt. 1986) found no reference to Steetz in this publication.

Only two collections attributable to Schomburgk and coming from Guyana have been located in Steetz's herbarium (see table 2).

SEEMANN, BERTHOLD (1825-1871).

Steetz was one of many collaborators for Seemann's *Bot. voy. Herald*, contributing treatments of the Compositae for both the Isthmus of Panama and the island of Hong Kong. In a letter to Asa Gray, dated 8 July 1854 Steetz stated that "Dr. Seemann communicated with me but a very few of his Panama Compositae, but promised me to procure some others of them. As soon as I receive doubles, I shall send them directly to you. I fear however that most of the novelties may be distributed already." A search of the MEL collections has so far revealed collections of only five species collected by Seemann in Panama, viz. *Elephantopus mollis* Kunth, *Melanthera microphylla* Steetz, *Pectis stricta* Willd., *Unxia digyna* Steetz and *Wedelia carnos*a Rich. Similarly only a few collections, e.g. *Blumea hieracifolia* DC. and *Vernonia solanifolia* Benth., from Hong Kong have been found in Steetz's herbarium. They were made by the British Botanist H.F. Hance and were received by Steetz from Seemann in 1857, the year in which Steetz's treatment of the Compositae of Hong Kong was published.

SHORT, CHARLES WILKINS (1794-1863).

Stafleu & Cowan (1985) list no fewer than 25 herbaria (but not MEL) which contain collections made by Short. Extensive collections (some hundreds) also exist at MEL and it is clear that most were acquired as part of Steetz's herbarium. As noted above and in table 2 Steetz acquired collections from Short on at least six separate occasions, i.e. the years 1837, 1838, 1841, 1843, 1844 and 1850. Some of Short's collections have come to MEL via O.W. Sonder's herbarium, having been forwarded to Sonder by Steetz, e.g. *Senecio balsamitae* Muhl. ex Willd. (= *S. aureus* L., MEL 1541370).

SIEBER, FRANZ WILHELM (1789-1844).

Sieber travelled widely, collecting plants in countries such as Austria, Italy, Crete, Egypt, Palestine, South Africa, Mauritius and Australia (Gunn & Codd, 1981; Stafleu & Cowan, 1985). His exsiccatae, of which Dietrich (1881) lists 23, frequently contain material collected by others. For example the collection of *Myrcia splendens* (Sw.) DC. var. *genuina* Berg. (MEL 1540721, table 2) is one of several sheets of South American Myrtaceae in Steetz's herbarium which was collected by F. Wrba and distributed by Sieber as part of his 'Flor. Trinitatis' (Dietrich l.c.). Steetz's note on the sheet erroneously states that the collection was made by Sieber.

By far the majority of Sieber collections in Steetz's herbarium were acquired in 1836 through the auspices of C. F. Ecklon. They come from many countries (tables 1-3) but just how they were acquired by Ecklon is unknown. Steetz presumably purchased them from Ecklon during the latter's stay in a house in the Hamburg Botanic Garden from 1833 to 1837 (Gunn & Codd, l.c.). Other Sieber collections acquired by Steetz came via Böckmann in 1838 and Buek in 1835.

SIEMSEN, G. THEODOR (dates unknown).

Siemssen was a merchant of Hamburg and a friend of Steetz. He worked for some time from Batavia (Jakarta) and during this period of his life visited Australia (table 1), taking the opportunity to collect and forward plants to Steetz (Steetz 1845b, p. 467). He collected in the vicinity of Port Jackson and gathered material of *Eurybia ericoides* Steetz [= *Olearia ericoides* (Steetz) N. A. Wakefield] from the environs of Hobart (MEL 1538904, *Pl. Preiss.* 1: 423) and *Stenantha conostephioides* Sond. [= *Astroloma conostephioides* (Sond.) Benth.] from Port Adelaide (MEL 648098, *Pl. Preiss.* 1: 296). Part of the latter collection was forwarded by Steetz to Sonder for description. Siemssen also collected in China (table 2).

Steetz honoured his friend by naming the genus *Siemssenia* Steetz (Compositae) after him. The only species recognised, *S. capillaris* Steetz, is generally referred to *Podolepis* Labill. but the genus is likely to be reinstated (Short, unpubl.).

As indicated in the memorandum relating to the purchase of Steetz's herbarium Siemssen acted as trustee to Steetz's widow. Ferdinand Mueller (1865), following acquisition of the herbarium, described *Aster siemssenii* F. Muell. [= *Olearia viscidula* (F. Muell.) Benth.] from material gathered by Siemssen at Port Jackson in 1838 and forwarded to Steetz.

SINCLAIR, ANDREW (1796-1861).

A letter by Steetz to Joseph Hooker, sent from Hamburg and dated 8 November 1856, reads in part:

"You favour me with a new offering on account of New Zealand plants, and I must confess, that it is a most acceptable one, because my Herbarium contains no more of the Flora of these interesting Islands, than a very small parcel, collected by Mr. Sinclair, and communicated to me by Mr. Gourlie last autumn during my visit in Glasgow, and because *your* plants, being the originals of your excellent Flora Novae Zeelandiae would be of the greatest interest to me."[(C) RBG Kew]

Sinclair, originally a surgeon with the Royal Navy, first collected in New Zealand in 1841 when, during the visit of the Antarctic Expedition, he accompanied Joseph Hooker and the Rev. W. Colenso on botanical excursions. He later became the Colonial Secretary (1844-1856) to New Zealand and devoted much of his leisure time to botanical pursuits. He continued to pursue these interests on his retirement and was drowned during a collecting expedition in the Southern Alps (Hooker 1864; Cheeseman 1906; Staffeu & Cowan 1985). Sinclair collected very copiously in the Bay of Islands, the Auckland districts, and in the Nelson Mountains.

The National Herbarium of Victoria contains a number of Sinclair collections and it is clear from annotations on the sheets that specimens have been obtained via J. D. Hooker, O. W. Sonder's herbarium and the Steetz herbarium. However the Hooker specimens have not necessarily come, as indicated in the above letter, via the Steetz herbarium. There is nothing on specimens we have examined to indicate this origin. It may be that all were sent directly to Mueller (1888). On the other hand, although some caution is necessary in attributing them solely to Steetz's herbarium, Sinclair collections that came via Gourlie and then Steetz's herbarium are readily distinguished by the printed labels (see above and tables 2 & 4, Fig. 8).

TURCZANINOW, NICOLAI STEPHANOWITSCH (1796-1864).

In the 1840's and 1850's the Russian botanist Turczaninow described as new a number of Australian plants from collections purchased from James Drummond (Black, 1935). Duplicate collections of those seen by Turczaninow are found in a number of herbaria, e.g. BM & K, and it is these, which were not examined by Turczaninow, that are frequently examined by both past and present botanists. Thus Bentham (1863) noted that "of the important and extensive West Australian collections of Mr. James Drummond I have had for examination complete sets of excellent specimens in the Kew Herbaria and in the majority of instances I have seen them in different sets so as to check the one with the other. I have thus been enabled to identify nearly the whole of the species published by Turczaninow" (p. 10).

A species folder of *Comesperma calyinega* in Steetz's herbarium contains small envelopes with fragments of *Drummond 429* and *Drummond 487*. There is no information as to their origin. However Steetz obtained some Drummond collections from Turczaninow. For example type specimens of *Thomasia triloba* Turcz. (MEL 1539808; table 1) and *Ditmostrophe angustifolia* Turcz. (MEL 1539813), both in the Sterculiaceae, are in Steetz's herbarium. Steetz noted on the sheets that he obtained both collections from Turczaninow in 1848. He also referred, on the herbarium sheet, to correspondence with Turczaninow in 1849 about the specimen of *D. angustifolia*. Steetz (12 April 1853) noted in a letter to Asa Gray that he had obtained some of Drummond's collections of the Compositae from Turczaninow. Specimens, e.g. of *Pachysurus multiflorus* Turcz. (MEL 543201) and *Chry-*

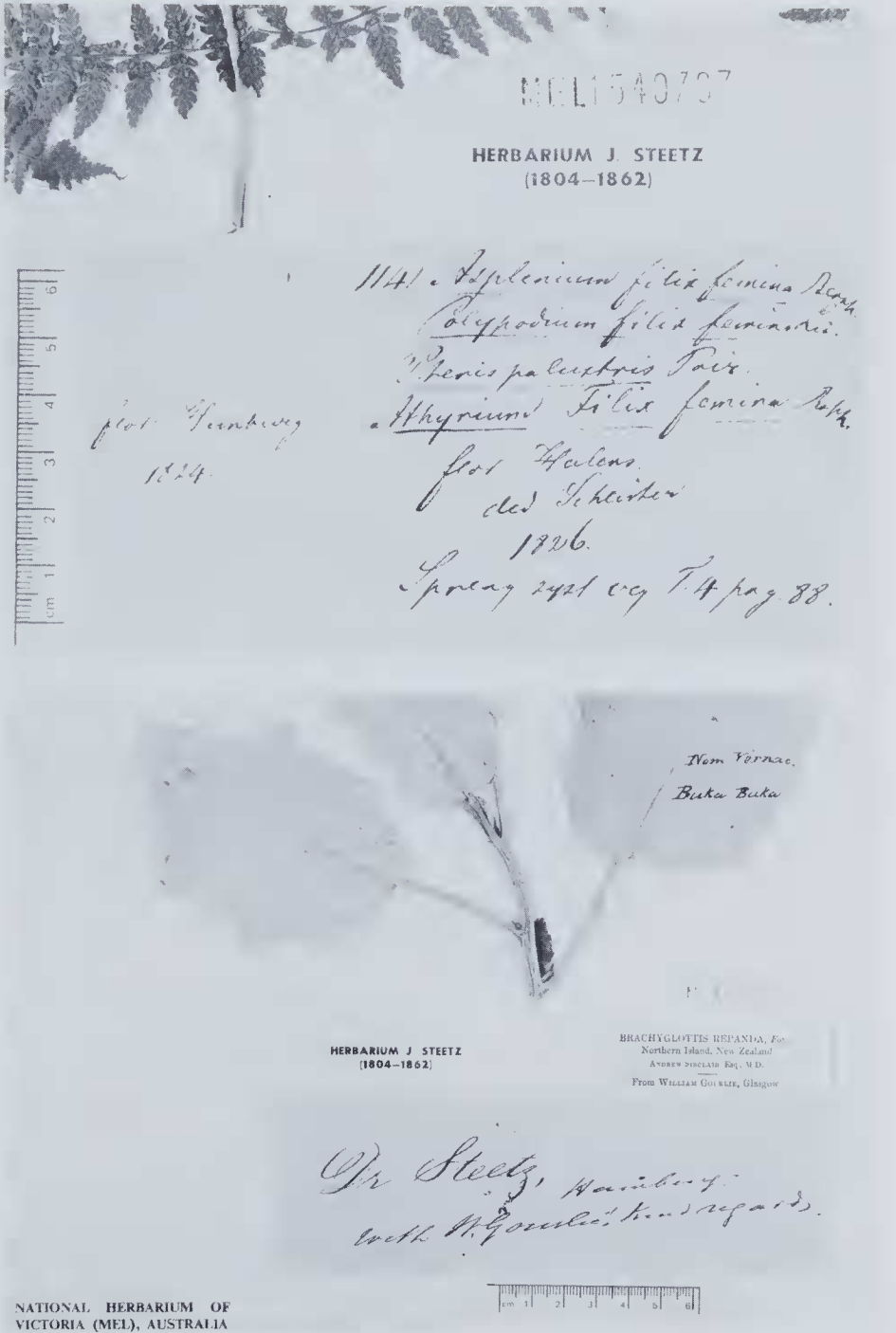


Fig. 8. Upper — Label in Steetz's hand accompanying specimen of *Athyrium filix-femina* (L.) Roth. (MEL 1540787). Presumed to be from a folder originally containing a number of separate collections. Lower — Specimen of *Brachyglottis repanda* Forster & Forster f. (MEL 1540568). Collection by A. Sinclair, communicated to Steetz by W. Gourlie.

socoryne uniflora Turcz. (MEL 541599), have been located at MEL. All are accompanied by a label in Turczaninow's hand. A pencilled date "1852", in what we believe is Steetz's hand, occurs on each label and is presumably the date of receipt of the specimens from Turczaninow. A pencilled "B" also occurs on the original labels accompanying the specimens of the Compositae, indicating that they were seen by Bentham for his account of the family in *Fl. Australiensis*.

As well as the Drummond collections Steetz's herbarium contains specimens gathered by Turczaninow from Siberia, e.g. *Aster tataricus* (table 2).

The assistance given by Turczaninow was well received by Steetz who assisted his friend by attempting to acquire specimens for him. Thus in a letter Steetz (12 April 1853) asked Asa Gray whether it was possible to acquire a specimen of *Dionaea muscipula* Ellis (Droseraceae) for Turczaninow. Steetz had "no more than a morsal of this rare plant" in his own herbarium. (The collection, MEL 1552858, has been located. It consists of a single plant and was acquired from C. W. Short in 1838.) It is also probably safe to assume that Turczaninow received plant specimens directly from Steetz, particularly in view of their common interest in Australian Compositae. Steetz also helped Turczaninow try and locate a missing consignment of specimens from Bentham. A letter from Steetz to Bentham, dated 21 August 1854, reads in part:

"Yesterday I received a letter from my friend Turczaninow from Kharkow, dated August 2nd, by which he informed me of you having mentioned to him in a letter of the 6th of June, 1853, that you intended to send to him in spring, the second part of the last collection of Spruce's North-Brazilian plants, and other plants of your own herbarium. By the unfortunate war [Crimean War] which has commenced last spring, you may be prevented to do so. My friend deplors much, that his interesting communication with England by the same circumstances has now been interrupted, and entreats me, to intermediate his correspondence with you. He wishes most anxiously, that you may have the kindness of addressing to me all parcels of plants destined for him, and I add, that, when you are willing to do so, I shall be delighted to forward them directly to him, and thus to do a favour to our mutual friend, who much regrets, to have nothing received from any foreign country since a very long time." [(C) RBG Kew]

In the same year Steetz also approached R. F. Hohenacker on the matter of missing consignments of plants destined for Turczaninow (see Appendix).

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APPENDIX STEETZ'S UNPUBLISHED CORRESPONDENCE

Copies of Steetz's letters (including English translations) consulted for this publication are held at MEL. Summaries of their content have also been compiled. However, permission to consult and cite extracts from letters is generally required from the institution holding the originals. Letters consulted by us are listed alphabetically by recipient.

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- Bentham, G. Three letters in English. Housed in K archives. Dated 4 October 1853, 21 August 1854 and 21 August 1856 (the latter assumed from letter content to be to Bentham).
- Binder, N. Single letter in German script. Housed in Staats- u. Universitätsbibliothek, Hamburg. Dated 3 October 1853.
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- Lehmann, J. G. C. Single letter in German script. Housed in HBG. Dated 4 September 1839.
- Müller, J. Single letter in German script. Housed in G. Dated 12 August 1859.
- Schlechtendal, D. F. L. von. Three letters in German script. Housed in HAL. Dated 21 December 1853, 21 August 1855 and 9 May 1858.
- Siemens. Single letter in German script. Housed in Handschriftenabteilung, Staats- & Universitätsbibliothek, Hamburg. Dated 23 May 1852.
- Struve, H. von. Single letter in German script. Housed in Staatsbibliothek, Preussischer Kulturbesitz, West Berlin. Dated 3 February 1849.

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